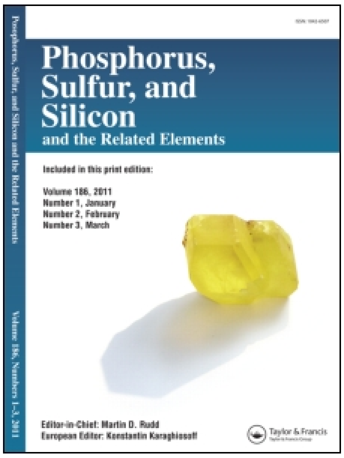

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Some Aryl Substituted Metal Phosphorus Double Bonded Complexes $C_5R_5(CO)_2M=PR'_2$ (R=H, CH_3; M=Mo, W)

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Some Aryl Substituted Metal Phosphorus Double Bonded Complexes $C_5R_5(CO)_2M{=}PR'_2$ ($R = H, CH_3$; $M = Mo, W$)

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The attempt to generate the metal-phosphorus double bonded system $Cp(CO)_2M{=}PPh_2$ (M = Mo, W) (**4a,b**) via thermal or photochemical decarbonylation of $Cp(CO)_3M{-}PPh_2$ (**1a,b**) leads to the formation of hydrido-phosphido-bridged complexes $(\mu^2{-}H)(\mu^2{-}PPh_2)[M(CO)_2Cp]_2$ (**2a,b**).
4a,b can however be obtained in solution by base-assisted dehydrohalogenation of $Cp(CO)_2(HPPh_2)M{-}Cl$ (**3a,b**). The reactions of **4a,b** with $Fe_2(CO)_9$, Me_3P or S_8 are presented.
In contrast to **1a,b** the complexes $C_5Me_5(CO)_3M{-}PPh_2$ (**5a,b**) can be easily decarbonylated to the corresponding double bonded species $C_5Me_5(CO)_2M{=}PPh_2$ (**6a,b**), but are only stable in solution.
Introduction of mesityl groups at the phosphorus raise the stability of the M=P complexes quite considerably. The compounds $Cp(CO)_2M{=}PMes_2$ (**7a,b**) are directly obtained via the heterogenous metalation of Mes_2PCl with $Na[M(CO)_3Cp]$. The X-ray structure of **7b** will be described.