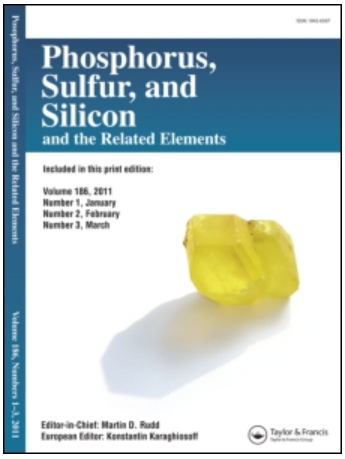

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Preparation and Reactions of Bulky Ethynylphosphines

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PREPARATION AND REACTIONS OF BULKY ETHYNYLPHOSPHINES

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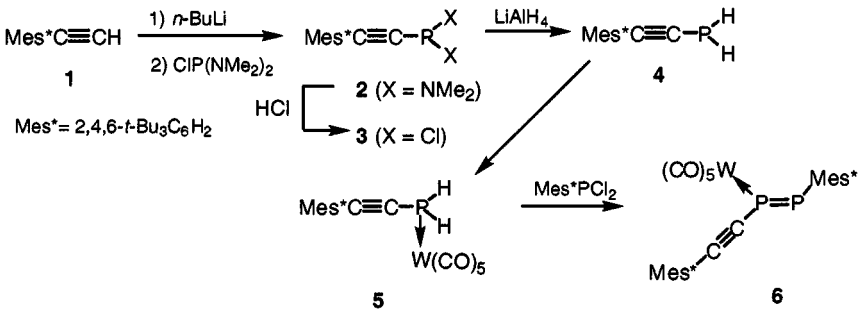
Ethynylphosphine system is expected to show the interaction between the lonepair of phosphorus and π-orbital of C≡C group, and some spectroscopic and theoretical investigations have been performed so far.[1] Although some ethynylphosphines have been derived, their instability limits the synthetic and structural study.[2] We report the preparation and some reactions of ethynylphosphines possessing the bulky 2,4,6-tri-*t*-butylphenyl (Mes*) group. Ethynylbenzene **1** was lithiated and allowed to react with chlorobis(dimethylamino)phosphine to afford **2**, and **2** was chlorinated with HCl to afford **3** as a thermally stable solid. Dichlorophosphine **3** was allowed to react with $LiAlH_4$ to give the corresponding primary phosphine **4** as a thermally-stable compound and the product was characterized by spectroscopic study. The Tungsten complex **5** derived from **4** reacted with Mes^*PCl_2 to afford a tungsten complex of diphosphene **6**.



SCHEME 1

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