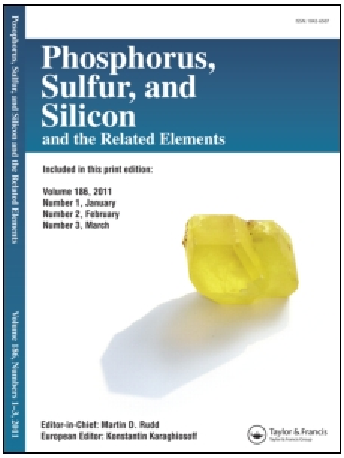

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The First Examples of Donor-Stabilized Phosphanetriyl-Phosphonium $[RP_2]$ Ions

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THE FIRST EXAMPLES OF DONOR-STABILIZED PHOSPHANETRIYL-PHOSPHONIUM $[RP_2]^+$ IONS.

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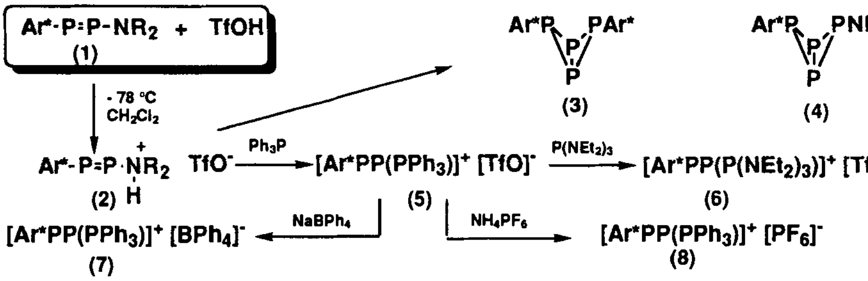
Abstract Synthesis of the first donor-stabilized phosphanetriylphosphonium ion $[Ar^*PP{<}{-}{-}PPh_3]^+$ via trifluoromethanesulfonic acid (TfOH) induced reaction of P-dialkylaminodiphosphenes, $Ar^*P{=}PNR_2$ (Ar^* = 2,4,6-tri-tert-butylphenyl) with triphenylphosphane has been described.

We found that in contrast with $Ar^*P{=}PAr^*$ which has undergone a P/P bond cleavage upon the low temperature reaction with strong acids (A. Cowley, 1983), a selective protonation of the nitrogen center takes place when diphosphenes (**1**) are treated with TfOH in CH_2Cl_2 at -78°C. Upon warming the solutions of (**2**) to 20°C the latter decompose to form *ca.* 50/50 mixture of bicyclotetraphosphanes (**3**) and (**4**). Addition of TfOH (2 equiv.) to a mixture of diphosphene (**1**) and Ph_3P results in near quantitative yield of the donor-acceptor adduct (**5**). The Ph_3P ligand of $[Ar^*PP(PPh_3)]^+$ readily participates in nucleophilic substitution reactions affording a novel entry to donor-stabilized phosphanetriylphosphonium cations. The structure of (7) has been elucidated by X-ray diffraction study [1].



Reference

[1] V.D. Romanenko, V.L. Rudzevich, E.B. Rusanov, A.N. Chernega, A. Senio, J.-M. Sotiropoulos, G. Pfister-Guillouzo and M. Sanchez, Chem. Commun., in press