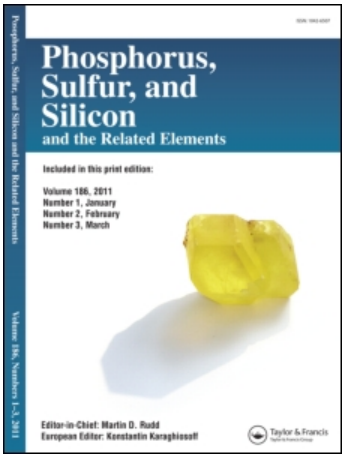

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Synthesis of Hexa- and Pentacoordinated Phosphorus Compounds from White Phosphorus

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Synthesis of Hexa- and Pentacoordinated Phosphorus Compounds from White Phosphorus

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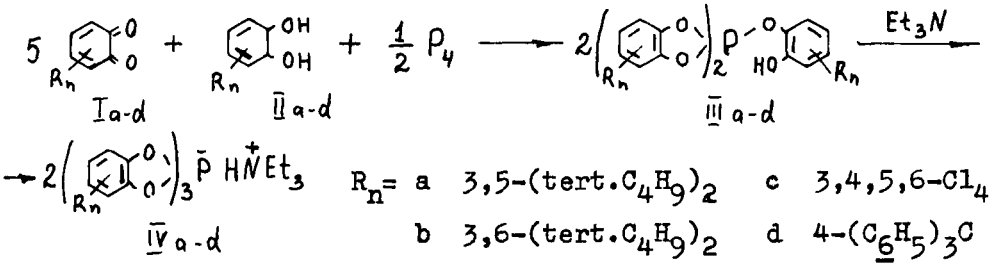
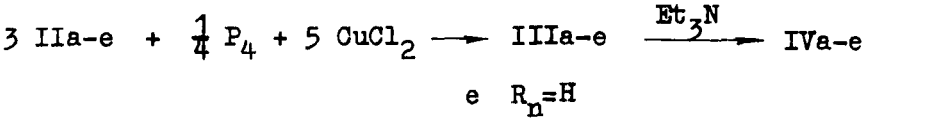
A new method is developed for the synthesis of phosphoranes (IIIa-d) and phosphorates (IVa-d) starting from substituted o-benzoquinones(Ia-d), catechols(IIa-d) and white phosphorus.



R_n= a 3,5-(tert.C_4H_9)$_2$ c 3,4,5,6-Cl_4
b 3,6-(tert.C_4H_9)$_2$ d 4-(C_6H_5)$_3$C

It is determined that this reaction is accelerated in the presence of anhydrous $Cu(OAc)_2$ or $CuCl_2$, and the yields of the products are increased (to 50-90%).

Another method is proposed for synthesis of phosphoranes (IIIa-e) and phosphorates(IVa-e) starting from substituted catechols(IIa-d) or catechol(IIe), white phosphorus and anhydrous $CuCl_2$ (yields 35-60%).



e R_n=H

The structures of IIIa-e and IVa-e were established by chemical and physical methods. The IIIb structure was determined by x-ray crystallography.