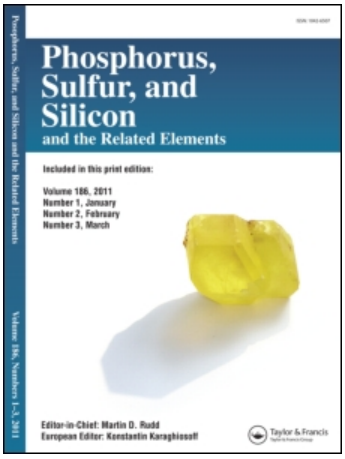

Phosphorus, Sulfur, and Silicon and the Related Elements

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Effective Methods of Preparation of Some Classes of Phosphororganic Compounds

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EFFECTIVE METHODS OF PREPARATION OF SOME CLASSES OF PHOSPHORORGANIC COMPOUNDS

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The convenient methods of preparation of secondary and tertiary phosphines, phosphinoxides and phosphonates on the basis of corresponding P-H acids and alkyl-, allyl-, allenyl-, ethynylarylhalides, 1,3-diens, acetylenic and vinylacetylenic hydrocarbons as alkylating agents have been elaborated. The reactions were proceeded in organic solvents in the presence of potassium carbonate under the conditions of interphase catalysis in liquid-liquid, liquid-solid systems, as well as in superbasic medium (schemes 1, 2)

$$R_2XH + CH_2{=}CH{-}C{\equiv}CH \xrightarrow[\bar{O}H]{IPhC} R_2X{-}CH_2CH{=}CHCH_2{-}XR_2 \qquad (1)$$

$$(RO)_2P(O)H + R^1Hal \xrightarrow[K_2CO_3]{} (RO)_2P(O)R^1 \qquad (2)$$

Double reactivity of dialkylphosphites under the conditions of interphase catalysis, unusual interaction of P-H acids with chloro-1,3-diens, including anomal nucleophilic substitution of chlorine at sp^2 hybridized carbon atom, insertion of oxygen into P-C bond during the reaction of secondary phosphinoxides with propargylic- and vinylpropargylic halides in the presence of potassium carbonate in inert gas flow (3) were studied.

$$R_2P(O)H + XCH_2C{\equiv}CR^1 \xrightarrow{K_2CO_3} R_2P(O)OCH_2C{\equiv}CR^1 \qquad (3)$$