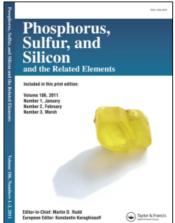
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## Phosphorus, Sulfur, and Silicon and the Related Elements

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## $P^{II}$ Compounds. Electrical Properties and Structure of Phospha-alkenes and Phospha-azenes

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## P<sup>II</sup> Compounds. Electrical Properties and Structure of Phospha-alkenes and Phospha-azenes

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Chemistry of twocoordinated phosphorus compounds has been rapidly developed in last years. Parallel with synthesis of new such compounds and investigating of their chemistry research of their spatial and electron structure assumes ever greater importance. Electrical methods are very informative in this aspect and also permit to determine unknown polaritirs of P<sup>II</sup>—bonds, that have great self-dependent interest. We have been studed for the first time the acyclic P<sup>II</sup>—compounds containing P=N, P=C, P=P, P=As, P=Sb — double bonds. Phosphaazenes R<sup>I</sup>P=NR<sup>2</sup>, where R<sup>I</sup>: (Me<sub>3</sub>Si)<sub>2</sub>N, 2,4,6-<sup>t</sup>Bu<sub>3</sub>C<sub>6</sub>H<sub>2</sub>; R<sup>2</sup>: Me<sub>3</sub>Si, <sup>t</sup>Bu, 2,4,6-<sup>t</sup>Bu<sub>3</sub>C<sub>6</sub>H<sub>2</sub> have small polarity I.5-2.0 D, wich describes by one set of parameteres. The main role in stabilization of -P=N-fragment having E-configuration belongs to sterical factors.

Conjugative effects are observed evidently in phosphaalkenes  $R^{\mathrm{I}}P=CR_{2}^{2}$  ( $R^{\mathrm{I}}=H$ , Me<sub>3</sub>Si,  $R^{2}=Alk_{2}N$ ) - their polarity increases to 4 D - especially in  $(Me_{2}N)_{2}C=P-P=C(SiMe_{3})_{2}$  (5.05 D). Double bond P=C in nonconjugated phosphaalkenes is almost nonpolar: m(P=C)=0.0 D.

The conversion of polarity of P=E double bond is observed in the row  $R^{\text{I}}P=ER^2$  (E=N, As, Sb):  $m(P=N) \cong 2$  D,  $m(As=P) \cong I$  D,  $m(Sb=P) \cong 2.5$  D.