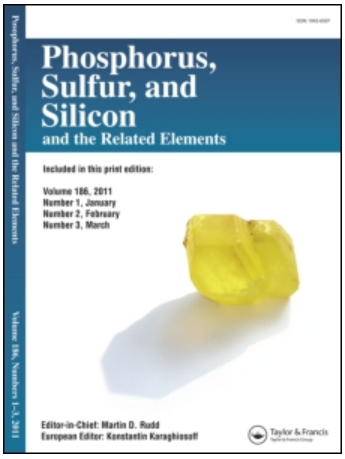

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P^{II} Compounds. Electrical Properties and Structure of Phospha-alkenes and Phospha-azenes

I. I. Patsanovsky[a]; E. A. Ishmaeva[b]; J. Z. Stepanova[a]; V. D. Romanenko[a]; L. N. Markovsky[a]
[a] Kazan State University, Kazan, USSR [b] Institute of Organic Chemistry Academy of Sciences of Ukrainian SSR, Kiev, USSR

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

I.I.Patsanovsky, E.A.Ishmaeva*, J.Z.Stepanova, V.D.Romanenko, L.N.Markovsky

Kazan State University, 420008, Kazan, USSR

Institute of Organic Chemistry Academy of Sciences of Ukrainian SSR, 252660, Kiev, USSR

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 importanse. Electrical methods are very informative in this aspect and also permit to determine unknown polaritirs of P^{II}-bonds, that have great self-dependent interest. We have been studed for the first time the acyclic P^{II}-compounds containing P=N, P=C, P=P, P=As, P=Sb - double bonds. Phosphaazenes $R^{I}P=NR^{2}$, where R^{I}: $(Me_3Si)_2N$, 2,4,6-$^{t}Bu_3C_6H_2$; R^{2}: Me_3Si, ^{t}Bu, 2,4,6-$^{t}Bu_3C_6H_2$ 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 $R^{I}P=CR^{2}_2$ (R^{I}=H, Me_3Si, R^{2}=Alk_2N) - their polarity increases to 4 D - especialy in $(Me_2N)_2C=P-P=C(SiMe_3)_2$ (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 $R^{I}P=ER^{2}$ (E=N, As, Sb) : m(P=N) $\simeq$ 2 D, m(As=P) $\simeq$ I D, m(Sb=P) $\simeq$ 2.5 D.