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Unsaturated Phosphorus Compounds: Spatial and, Electronic Structure on the Base of Electrical and Electrooptical Methods

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UNSATURATED PHOSPHORUS COMPOUNDS:
SPATIAL AND ELECTRONIC STRUCTURE ON THE BASE OF
ELECTRICAL AND ELECTROOPTICAL METHODS.

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The influence of classical systems connected with phosphorus atom: $>P(Y)-C(R)=C<$, $>P(Y)-C\equiv C-$ and unusual ones, $-P=E$ and $P\equiv C-$ on spatial and electronic structure of organophosphorus compounds has been considered. On the complex analysis ground of polarity and polarizability data, obtained for model olefines, imines, acetylenes and nitriles the existence of nonformal similarity between this compounds classes has been demonstrated. It is reflected in analogy of conformational behaviour and electron effects, realized with participation of multiple carbon, nitrogen and phosphorus bonds:

a). Rotation isomery about P-C and P-N bonds are characterized by stabilization of bissectoral forms for the structural types with usual and low-coordinated phosphorus.

b). Introduction of $-C(R)=C<$ or $-C\equiv C-$ fragments to phosphorus atom not changes the principal rotation picture isomery about another simple phosphorus bonds.

c). In low-coordinated phosphorus and arsenic compounds and in corresponding unsaturated carbon and nitrogen derivatives, classical multiple bonds and ones formed by trivalent phosphorus and arsenic demonstrate the available analogy as a partners for conjugation.

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