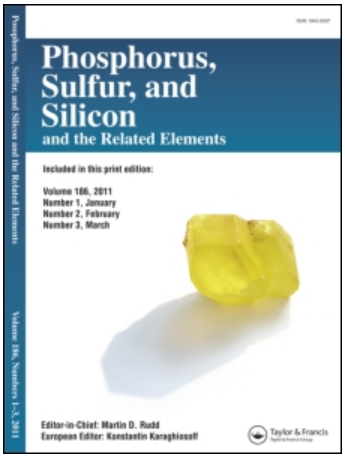

Phosphorus, Sulfur, and Silicon and the Related Elements

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UPS Investigation on the Participation of Phosphorus and Arsenic in Conjugated System

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UPS INVESTIGATION ON THE PARTICIPATION OF PHOSPHORUS AND ARSENIC IN CONJUGATED SYSTEM

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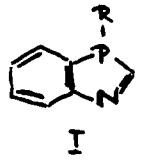
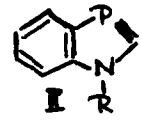
The participation of nitrogen in conjugated systems can be attained by two different ways, either by the conjugation between the lone pair of nitrogen and the π system (like in aniline) or by the presence of a C=N double bond in the π system of the molecule (like in pyridine). The investigation of benzazaphosphols and benzazarsols gives opportunity to consider the mentioned two types of conjugation in the case of P and As. The molecules can exist in two isomeric forms (I and II):



I



II

According to the ultraviolet photoelectron spectra of compounds belonging to the two types of isomers it could be concluded that while the double bond between C and P or As is in conjugative interaction of great extent with the system of the other part of the molecules, the conjugation ability of the lone pair of P and As is small. Our conlusions were supported by the results of quantumchemical calculations.