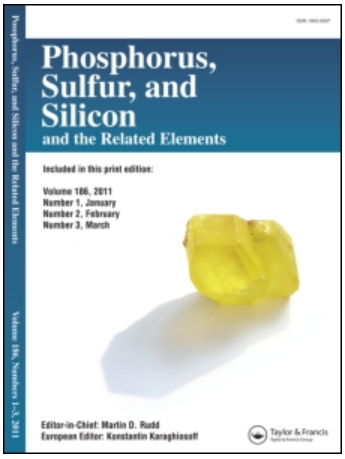

Phosphorus, Sulfur, and Silicon and the Related Elements

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Conformational Analysis of Halogenonitroethenes and Halogenonitroethenephosphonates in Solution

Yana Vereshchagina[ab]; Eleonora Ishmaeva[a]; Gulnaz Fattakhova[b]; Valentina Berestovitskaya[c]; Lyubov Deiko[c]; Galina Berkova[c]; Sergey Makarenko[c]; Evgeniy Truhin[c]; Arkadiy Pudovik[a]
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CONFORMATIONAL ANALYSIS OF HALOGENONITROETHENES AND HALOGENONITROETHENEPHOSPHONATES IN SOLUTION

Yana Vereshchagina,[a,b] *Eleonora Ishmaeva,*[a] *Gulnaz Fattakhova,*[b] *Valentina Berestovitskaya,*[c] *Lyubov Deiko,*[c] *Galina Berkova,*[c] *Sergey Makarenko,*[c] *Evgeniy Truhin,*[c] *and Arkadiy Pudovik*[a]
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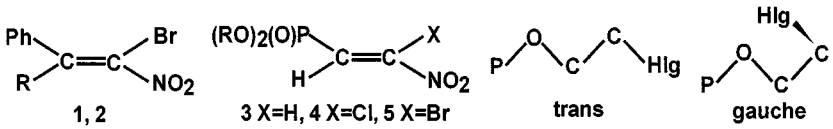
Spatial structure of 2-cyclohexylamino(**1**)- and 2-piperidino(**2**)-1-bromo-1-nitro-2-phenylethenes was studied by PMR, IR spectroscopy, and method of dipole moments (DM). Both molecules had E-configuration (Ph and NO_2 are trans-arranged). High polarity of compounds **1**, **2** (about 7 D) and IR spectral data indicate significant contribution of bipolar forms into these structures. Structure of β-nitrosubstituted vinylphosphonates **3–5** was studied by NMR ^1H, ^{31}P, UV, and IR spectroscopy, and DM. We determined that these compounds existed in



SCHEME 1

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a state of totality of s-trans-conformations. Forms with gauche-trans-orientation of C—Cl and C—O bonds prevailed in conformational transitions determined by internal rotation around P-Csp^2 and Csp^3-Csp^3 bonds.