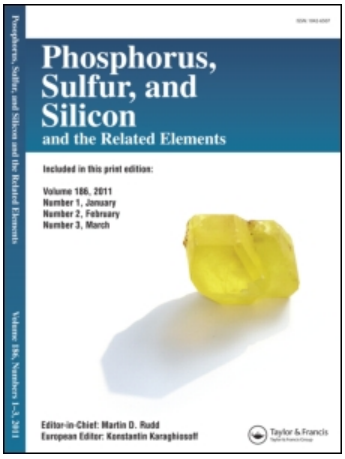

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Methods of Synthesis of Organophosphorus Nitro-Compounds and Aminoalkylphosphonic Acids

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METHODS OF SYNTHESIS OF ORGANOPHOSPHORUS NITRO-COMPOUNDS AND AMINOALKYLPHOSPHONIC ACIDS

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Reduction of nitroorganophosphorus compounds is a way to synthesize functionally substituted aminoalkylphosphonic acids.

Experimental methods of synthesis of nitroorganophosphorus compounds were proposed: by nitration vinylphosphonates by nitrogen oxides; interaction between phosphorus-containing compounds with active hydrogen atom and conjugated nitroalkenes; condensation of nitroalkanes with vinylphosphonates and acylphosphonates. The dependence of the reaction direction on the structure of reacting compounds and experimental conditions was shown.

The structure and chemical conversions of nitroorganophosphorus substances were investigated.

A method of dialkyl-2-nitrovinylphosphonate synthesis is proposed. It is shown that these substances are active in reactions of nucleophilic addition with amines, CH-acids, β-diketones, nitroalkanes, halogens and N,N-dialkyl aniline, and take part in other addition reactions.

Aminoalkylphosphonic acids were obtained by the reduction of some nitroorganophosphorus compounds followed by acidic hydrolysis.