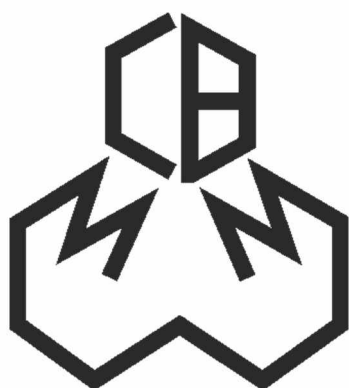


XX INTERNATIONAL SYMPOSIUM
„ADVANCES IN THE CHEMISTRY OF
HETEROORGANIC COMPOUNDS”

and

XVII INTERNATIONAL SYMPOSIUM ON SELECTED
PROBLEMS OF CHEMISTRY OF ACYCLIC AND CYCLIC
HETEROORGANIC COMPOUNDS

ORGANIZED BY



Section of Heteroorganic Chemistry
Polish Chemical Society

Centre of Molecular
and Macromolecular Studies
Polish Academy of Sciences



in cooperation with

Faculty of Chemistry
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and Natural Sciences
Jan Długosz University
in Częstochowa

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Polish Chemical Society

ŁÓDŹ, November 23-24, 2017

XX International Symposium
“Advances in the Chemistry of Heteroorganic Compounds”
and

XVII International Symposium
on Selected Problems of Chemistry
of Acyclic and Cyclic Heteroorganic Compounds

are dedicated to

Professor
Marian Mikołajczyk
on the occasion of his 80th birthday



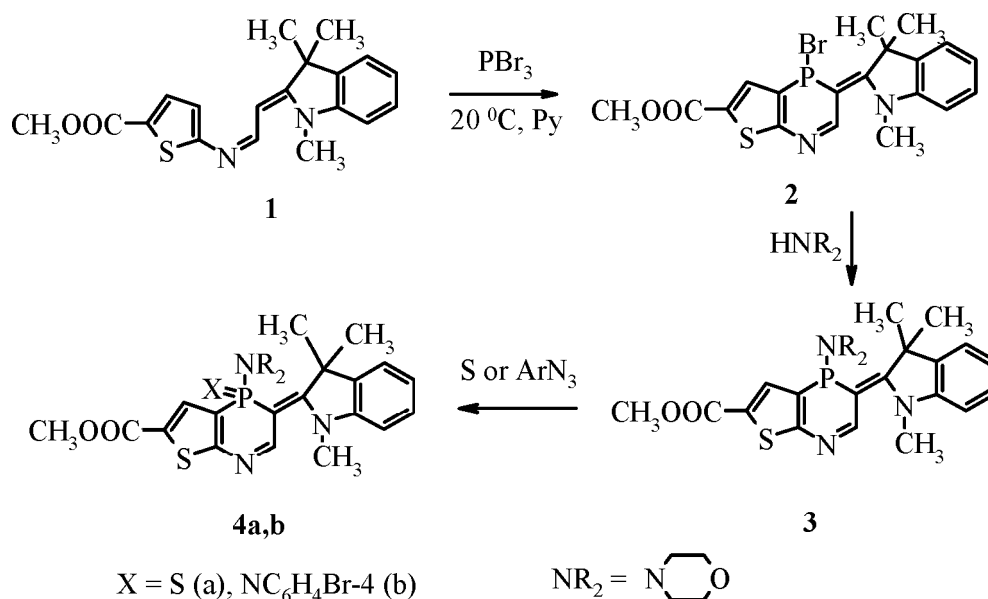
Synthesis of Six-Membered Thiophene-Annulated Heterocycle Containing P and N atoms

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The main reported methods of synthesis of heterocycles containing endocyclic P-atom and annulated with the thiophene nucleus are based on interactions between lithium derivatives of thiophene and tri- or pentavalent phosphorus halides or esters [1, 2]. Derivatives of unknown earlier bicyclic system thieno[3,2-e][4,1]azaphosphinine have been obtained by phosphorylation of N-substituted 2-amino-5-carbmethoxythiophene derivative with phosphorus tribromide under the mild conditions. Easy available reagents were used. It was found the compound (1) containing an enamine fragment with exocyclic C-nucleophilic centre reacts with phosphorous tribromide to form a new phosphorus-containing fused system (2). Phosphorylation proceeds with the participation of two nucleophilic C-centres, exactly, the endocyclic C3-thiophene atom and the exocyclic CH-centre. Derivatives of three- (3) and four-coordinated phosphorus (4a,b) are synthesized on the basis of compound (2) (Scheme 1).



Scheme 1.

The compounds obtained are stable under the normal conditions, contain an ester group and can be used as starting material for different reactions. Obtained heterocycles contain endocyclic P and N atoms in the same ring, so multifunctional ligands can be created on basis of these compounds to solve problems of coordination chemistry.

References

- [1] K. Dotz, A. Tiriliomis, K. Harms, *Tetrahedron*, **1993**, 49, 25, 5577-5597.
- [2] A. Ishii, T. Tsuchiya, J. Nakayama, M. Hoshino, *Tetrahedron Lett.*, **1993**, 34, 14, 2347-2350.