The proposed research will be a supplementation of hitherto conducted studies on the synthesis of a new optically active thio(seleno)phosphinic acids. Moreover, they will provide an important part of my doctoral dissertation. In asymmetric synthesis obtaining of certain stereoisomer of a desired compound is determined by selection of a chiral auxiliary, which is incorporated into synthesis in order to receive an enantiomerically pure compound.

Although there are existing rich libraries of chiral auxiliaries, further research on to development of a new effective chiral auxiliaries remains an important issue in synthetic organic chemistry. In the framework of proposed project several possible stereocontrolled organic synthesis with usage of, hitherto non describe in literature, organophosphoric compounds as chiral auxiliaries.

Realization of the proposed project will lead to an enlargement of the collection of chiral auxiliaries by a group of new derivatives in which the presence of chiral substituents derived from organophosphoric thio(seleno)acids allows convenient induction of optical activity and bring about physico-chemical properties useful concerning the application of the considered derivatives as chiral auxiliaries in organic and asymmetric syntheses.