

Organic synthesis delivers tools and methods for construction of new, unique molecules, which find practical applications in all areas of life. Production volume of these compounds continuously grows, that urges search of procedures **improved**, both economically and **environmentally**, by reduction of consumed energy, generated wastes, and use of fine materials. In this context planned research project concerns development of fundamental transformations of organic chemistry, as olefination of carbonyl compounds, nucleophilic fluorination, and synthesis and transformations of sulfonyl compounds. Products of the mentioned processes display important applications: e.g. ca. 40% of agrochemicals and 20-30% of pharmaceuticals contain fluorine atoms, sulfonyl derivatives are valuable drugs and dyes, whereas double C=C bonds are ubiquitous structural motifs in raw materials, intermediates, and target compounds. Although the planned studies concern mainly basic research of reactivity of molecules and properties of the reacting systems, their results seem to be easily applicable in practice.

