

**Review of the scientific supervisor for
the bachelor's final qualification work of Ilya Mikhailovich Baranov on the topic
"Synthesis of alkyl 4-arylbuta-2,3-dienoates and their reactions under conditions of
superelectrophilic activation»**

The bachelor's final qualification work of Baranov I. M. is devoted to synthesis of esters of allenecarboxylic acids (alkyl allenates) and study of their reactions under the action of strongly acidic reagents. The main result of the work is the development of a method for the synthesis of 2-furanones, which are of great importance for medical chemistry and biology.

During his bachelor's work, Baranov I. M. mastered the basic techniques of laboratory organic synthesis and methods of purification of substances. He gained experience working with various acidic systems: Bronsted superacid $\text{CF}_3\text{SO}_3\text{H}$, strong Lewis acids AlCl_3 and AlBr_3 , zeolites, and other reagents. For the analysis of the obtained compounds, he used ^1H , ^{13}C , ^{31}P NMR methods, including two-dimensional techniques, conducting a detailed assignment of signals in the spectra of substances. Baranov I. M. proposed multi-stage schemes of complex transformations of cationic particles generated from allenates into target reaction products.

The results of the research of I. M. Baranov were selected at a competition, from more than 100 participants, for an oral report in remote mode at the International Scientific Conference of Students, Postgraduates and Young Scientists "Lomonosov-2021", held at the Moscow State University on April 12-21, 2021.

During his bachelor's work, Baranov I. M. proved himself as a capable chemist. A good theoretical background obtained during his studies at the Institute of Chemistry of St. Petersburg State University, such personal qualities as dedication and a desire to obtain new scientific results allowed him to perform the work at a high professional level.

The work deserves an EXCELLENT rating.

Scientific supervisor



Dr. Sci., Professor Aleksander V. Vasilyev