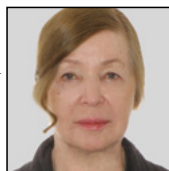


## Influence of low-frequency sonolysis on the kinetics of chemical reactions involving associates

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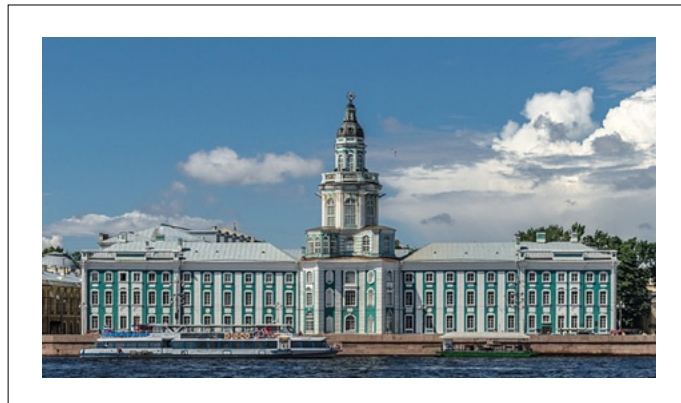
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### Abstract

The effect of the association of reactants on the kinetics of reaction in the liquid phase is studied. The mathematical modeling of chemical reactions that are described by nonlinear differential equations is performed. The steady states, the conditions for the emergences of intermediates, and the nature of their concentration oscillations in the reaction system are described. The influence of low-frequency sonolysis on the kinetics of bimolecular reactions was studied with due regard for the association of dimers/trimers of starting reagents. With increasing frequency and amplitude of low-frequency sonic waves (up to some critical value), we observed the disappearance of trimers and concomitant cessation of the reaction. This observation offers an additional

tool for controlling reaction rate by the external action of low-frequency vibrations.



### Biography

Tatiana Kulagina, Doctor of Science (Physics - Maths), now is the head of laboratory of theoretical radiofrequency of the Institute of problems of Chemical Physics RAS. She is Doctor of Science from 1995. She performs scientific management and development of the theory of pulsed methods of nuclear magnetic resonance in solid state and polymers, the theory of chemical reactions in liquid phase with associates. She is a term of the Academic council of theoretical department, a term of dissertation council of Institute.

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