

2<sup>nd</sup> International Conference on

# PHARMACEUTICAL CHEMISTRY

October 02-04, 2017 Barcelona, Spain

## Analysis of the polar solvents influence on the mechanism of the inhibited oxidation of unsaturated compounds

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Polar solvents are widely used in the pharmaceutical industry and in various fields of applied chemistry. The ability to dissolve many organic substances and the wide temperature limits of the liquid state make polar solvents essential components of reaction mixtures in industrial and biotechnological processes as well as the components of drugs. On the other hand, polar solvents determine the medium in which the chemical process proceeds, and often have a significant effect on its kinetics. Therefore, an important practical task is to take into account the influence of the medium polarity on the kinetics of chemical reactions. Thus, the medium polarity can have a significant effect on the reactivity of unsaturated compounds during the oxidation by molecular oxygen. The study of this process is important both for chemical technology and for understanding the chemistry and biology of oxidative stress. The effects of nonspecific and specific solvation may have a significant effect on the mechanism of oxidation of unsaturated compounds in the medium of polar solvents. The addition of an oxidation inhibitor to the reaction mixture complicates these effects. The report discusses the results of a systematic study of specific and nonspecific solvation effect on elementary stages of the inhibited oxidation of unsaturated compounds (methyl oleate, styrene, methyl methacrylate, butyl acrylate). Antioxidants are phenols (PhOH), aromatic amines (AmH), stable nitroxide radicals ( $>NO\bullet$ ), and corresponding hydroxylamines ( $>NOH$ ). The results were obtained using a modern analytical basis: high-sensitivity microvolume, FT-IR, and NMR spectroscopy.

### Biography

Sergey Lednev has completed his PhD at P G Demidov Yaroslavl State University. He is an Assistant Lecturer at the Department of General and Physical Chemistry. He has published 2 papers in reputed journals.

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