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To assess of behavior of natural colloid (soil extraction and fractionation of natural water) humus acid in comparison with synthetic humus acid

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To study and predict the fate of natural colloid - nanoparticles in surface water or soil extraction - necessary to understand the features of the migration and physic-chemical activity of biocolloids. Comparison of the behavior of natural biocolloids, such as humus acid extracts of soil or natural water with artificial, synthetic humic acids (introduced into the environment) allows you to explore the mechanism of formation and transformation biocolloids under the influence of a number of parameters.

In this work, we studied these interactions in natural surface waters from lakes and soil (Russian Federation, Kola North and Western Siberia) which displaying contrast organic and inorganic compositions. During the study, researches identified zonal features influence on the qualitative and quantitative composition of colloids, their stability and chemical activity.

A model approach was also followed with synthetic water of comparable composition in order to better understand the driving mechanisms. We investigated the size, zeta potential and other physical and chemical parameters of the system. Particular attention is given to the process of complexation with heavy metal ions. As humic substances have excellent complexion properties and reduce the toxicity of many metal ions.

The study of such non-static natural systems allow studying the features of the existence of natural colloidal components.

The use of synthetic humic substances, which were introduced into the natural environment possible to study the standard mechanisms of formation, development and destruction of colloidal polymer systems. The obtained results allowed with used computer programs MatnLab, MathCad, Statistics simulate the processes of formation, development and functioning of natural colloids.