Publication is available for discussion in the framework of the on-line Internet conference "*Butlerov readings*".
http://butlerov.com/readings/
Submitted on July 12, 2016.

Some quantum considerations on oscillation characteristics of oxyhydrate gels

Boris A. Markov,[1] and **Yury I. Sukharev** [2*+]
[1] *Department of Computational Mathematics of South Ural State University (National Research University). Prospect Lenina, 76. Chelyabinsk, 454080. Russia.*
[2] *Department of Chemistry of Solids and Nanoprocesses. Chelyabinsk State University. Br. Kashirinyh St., 129. Chelyabinsk, 454000. Russia. Phone: +7 963 460 2775. E-mail: Yuri_Sucharev@mail.ru*

*Supervising author; [+]Corresponding author

Keywords: entangled states, emission wave duality ,quantum correlations, Lagrangian mappings, Liesegang operator multipoles, oxihydrates gel systems, colloidal clusters, spontaneous pulsation flow, diffuse double electric layer, topological continuum, dissociation-disproportion mechanism, Whitney theory, geometry of caustics, noise states.

Abstract

An ordinary nonlinear reaction-diffusion equation is known: $\frac{\partial}{\partial t}n = D\Delta n - (E-U)n\ln n$. Those equations describe chemical processes that occur in oxyhydrate colloid systems and are called equations with Liesegang operator. The state of a colloid is fully set by the function of a phase as a matrix colloid concentration. No multiplier $\ln n$ is used unless concentrations of the matrix forming gel change within considerable limits; in other words, if the influence of the logarithm is weak.

A correlation between the equation $\frac{\partial}{\partial t}n = D\Delta n - (E-U)n\ln n$ obtained and the previous equation $\frac{\partial}{\partial t}n = D\Delta n + L[n]$ was discovered, which means that the Liesegang operator is written down:

$$L[n] \equiv -(E-U)n\ln n,$$

as gel phase function dynamics: + sign in the operator corresponds to energy loss by this gel phase, while – sign – to energy accumulation. This is why entanglement expressed by the equation of Liesegang systems is a special quantum form of correlation between compound systems, which has no classical analog, and forms in a compound system that consists of two or more interacting systems (or those that had interacted and then were separated), and is a superposition of macroscopically quantized states, with fluctuations in individual parts being interrelated through non-local quantum correlations, not through classical interactions (correlations).