

Probabilistic and dynamic colloid equations

© Boris A. Markov,¹ and Yury I. Sukharev^{2*+}

¹ Department of Computational Mathematics. South Ural State University (National Research University).
Lenin St., 76. Chelyabinsk, 454080. Russia.

² Department of Solid State Chemistry and Nanoprocesses. Chelyabinsk State University.
Kashirinykh St., 129. Chelyabinsk, 454000. Russia. Phone: 89634602775. E-mail: Yuri_Sucharev@mail.ru

*Supervising author; +Corresponding author

Keywords: Lagrangian display, electroglobal, fulleroid, multipoles, oxihydrates systems, colloid clusters, spontaneous pulsation flow, the diffuse electric double layer, topological continuum, dissociative-disproportionate mechanism, Whitney theory, geometry of caustics.

Abstract

We obtained two equations that characterize the structure of the colloid: the equation of the Schrodinger type that specifies the redistribution of heat and potential energy in the colloid and material equation – the diffusion equation with the operator of Liesegang associated directly with a substance that allows you to find the discontinuities of the structures caused by the vibrations of electrically charged particles. This procedure based on the assumption of the instability of the colloidal state, caused by the movement of charged particles. The reality is not collected in parts from the particles of matter in the course of evolution from the past to the future, and is all at once from the past to the future for a given pattern, that is, for specific PATTERNS, as defined by quantum theory. Without going deep into the theory of Kulakov, we will accept its fundamental provisions as a certain given. The forms of this structural data were obtained experimentally and mathematically confirmed.

Let there be a certain angle of the skeleton, where due to the unevenness and partial randomness of the structure of the core grids forms "defects" – that is, electrical or magnetic moments of a particular order. Then small mobile clusters are attracted to it by electrostatic or electromagnetic forces, which are then adsorbed and somehow arranged on the "defects" in accordance with their dipole moments.

This circumstance can be determined by "magic numbers", that is, as the number of clusters "stuck" to the defect of the core structure, with the formation of chemical bonds in the future.

We can assume that the spanning structure of Coxeter can form small clusters form regular polyhedrons, and may occur or other structure having more complicated form.

References

- [1] *Earnshaw, Samuel (1842)*. On the Nature of the Molecular Forces which Regulate the Constitution of the Luminiferous Ether. *Trans. Camb. Phil. Soc.*7: P.97-112.
- [2] I.E. Tamm. Bases of the theory of electricity. *Moscow: Fizmatlit. 2003*. 616p. (russian)
- [3] E.D. Shchukin, A.V. Pertsov, E.A. Amelina. Colloid chemistry. *Moscow: Publishing house of Moscow University. 1982*. P.297-382. (russian)
- [4] B.V. Deryagin, M.V. Churaev, V.M. Muller. Surface forces. *Moscow: Science. 1985*. P.3-398p. (russian)
- [5] N.B. Uriev. Dynamics of structured disperse systems. *Colloid. journal. 1998*. Vol.60. No.5. P.662-683. (russian)
- [6] Leadership LCard
- [7] Leadership ZLab
- [8] Your work related to both
- [9] A. Schuster. "On the investigation of hidden periodicities with application to a supposed 26 day period of meteorological phenomena." *Terrestrial Magnetism and Atmospheric Electricity. 1898*. Vol.3. P.13-41.
- [10] A.B. Sergienko. Digital signal processing. 2. *St. Petersburg: Peter. 2006*. P.751. (russian)
- [11] A.G. Sveshnikov, A.N. Bogolyubov, V.V. Kravtsov. Lectures on mathematical physics. *Moscow: Izd-vo MGU. 1993*. 352p. (russian)
- [12] J.M. Haile. Molecular dynamics simulation. *Wiley. 1992*.
- [13] A.A. Arsenyev. Lectures on kinetic equations. *Moscow: Nauka. 1992*. (russian)

- [14] J.-R. Authelin, A.P. MacKenzie, D.H. Rasmussen [et al.]. Water clusters in amorphous pharmaceuticals : [англ.]. *Journal of Pharmaceutical Sciences^{en}*. **2014**. Vol.103. No.9.
- [15] R. Feynman, R. Leighton, M. Sands. Feynman lectures on physics. Vol.5: Electricity and magnetism. Translation from English (edition 3). *Editorial URSS*.
- [16] Y.I. Sucharev, B.A. Markov, T.I. Prolubnikova, I.I. Lebedeva. Quasi-periodic noise oscillations in oxyhydrates of rare-earth elements. *Eurasian Chemico-Technological Journal*. **2012**.
- [17] R. Feynman, R. Leighton, M. Sands. Feynman lectures on physics. Vol.5: Electricity and magnetism. Translation from English (edition 3). *Editorial URSS. Two thousand four*. **2004**.