

New principles of the research into imperfect crystallographic forms of colloidal chemical clusters

© Yury I. Sucharev,^{*+} Boris A. Markov, and Oksana M. Shanina

Department of Solid Body Chemistry and Nanoprocesses. Chelyabinsk State University.

Br. Kashirins St., 129. Chelyabinsk, 454000. Russia. Phone: +7 (9634) 60-27-75.

E-mail: Yuri_Sucharev@mail.ru.

*Supervising author; ⁺Corresponding author

Keywords: *Lagrangian mappings, oxyhydrate gel systems, colloid clusters, spontaneous pulsation current, spike surge, diffuse double electric layer, bi-particle interactions, topologic continuum, dissociation disproportion destruction of macromolecules, Whitney's theory, geometry of caustics.*

Abstract

The research that we conducted into nonlinear properties of gel oxyhydrate systems revealed the following oscillatory dilatancy, oscillatory (pulsation) electrical conductivity, spontaneous electrical current of the gel self-organization accompanied by polarization phenomena, tinting of gel systems, oscillatory optical and sorptive properties, and many more, which we have presented on our website (<http://oxyhydrate-gel.ru>), as well as in our major works.

We consider these properties to be connected with colloid systems symmetry and their wave oscillations in time. In this work, we prove our point that is based upon experimental data of current diagrams and their study.