

The generalized Schrödinger-Batanov equation important fundamental basis for new approaches to the study of physics and chemistry of macrosystems, for example, colloidal-chemical

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Abstract

Mathematically, using Vlasov-type kinetic equations, the vibrational character of the formation of a discrete set of planar circular pacemakers in a self-organizing two-dimensional gel system of polymer oxyhydrates of heavy metals (for example, zirconium, iron, yttrium oxyhydrate) is shown mathematically.

The effect of quantizing the radii of circular pacemakers of zirconium oxyhydrate gels, far from the equilibrium state, during their formation in time, was observed experimentally. In yttrium oxyhydrate gels, opaque crystallites of a repeating form are present, which are the result of the interaction of circular concentration clusters. The diameters of these clusters without electromagnetic irradiation form two standard series and double in this case. Irradiation in a magnetic field contributes to the appearance of a third series of diameters of clusters with large values.

The periodic wave representations of the structuring of oxyhydrate gels, which we observed experimentally, found theoretical confirmation by Batanov M.S. The generalized Schrödinger kinetic equation is obtained. It is suitable for describing the most probable states of point objects of both the microcosm and the macrocosm under the condition that the random processes under consideration are stationary.

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