

ABSTRACT

## PHYSICAL–CHEMICAL POLARIZATION NATURE OF LIVING GELS OF HEAVY METALS OXYHYDRATES

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In colloid gel systems the spontaneous concentration differentiation of a substance in time and space is observed. This differentiation is of the autowave (pulsating) nature (periodic self-organization) and takes the form of “frozen” helical whirls.

The optical density of yttrium oxyhydrate gels depending on the wave length of the incident light exhibits rather wide regions with the low optical density of gels (the formation of homeotropic-like structures with the transformation of helical whirls), i.e. the samples became optically transparent over a definite discrete interval of wave lengths. The effect of forming the structures of the chiral-smectic type accounts for the colouring of yttrium oxyhydrate gel due to the selective diffraction reflection.

The concentration periodicity of the oxyhydrate gels system is analyzed by introducing a Liesegang function. For unbalanced gel systems the Liesegang function is a peculiar kind of the isotherm of the concentration variation of the gel system in time.

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