ABSTRACT

ABOUT INTERCONNECTIONS OF SOME PARAMETERS OF SELF–ORGANISING OHYHYDRATE GELS AND THEIR EXPERIMENTAL DETERMINATION

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In our earlier works the appearance of pulsating current in the elongated cell filled with the zirconium oxyhydrate gel under short–circuited electrodes and constant mixing was shown. The pulsating character of the current is expressed in the form of current splashes. The reason for the appearance of current splashes is the self–organization of gel with time, to be more exact, the reason is the constant conformational reorganization of oxyhydrate matrix.

The connection between some parameters of self–organizing gel cell is analytically determined.

The experimental values of structured elements of zirconium oxyhydrate gel system are computed. The increase of the geometric sizes of structured gel fragments in a magnetic field is discovered, which can be explained by the fleximagnetic effect in liquid crystals, as oxyhydrate gels are liquid crystals as well.

With the increase of gel fragment geometric sizes the chaotization of gel system increases, the mechanism of chaotization being the doubling of period by Feigenbaum. 3–5 doubling periods are detected which means that from 3 to 5 types of pacemakers are discovered.

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Key words: zirconium oxyhydrate gels, self–organizing, Liesegang operator.
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