

## A tool of post-industrial civilizations

*Any sufficiently advanced technology is indistinguishable from magic.*

Arthur C. Clarke

*Any advanced extraterrestrial intelligence is indistinguishable from God.*

Michael Shermer

*A theory is all the more impressive the simpler its premises,  
the greater the variety of phenomena it covers.*

*and the wider its scope of application.*

Albert Einstein

"Tool of post-industrial civilizations" is a non-networked quantum-digital technology of purposeful influence on the objects of animate and inanimate nature, accessible for visual observation, by operating digitized records of two or more light streams, cyclically reproduced by the controlling IT-complex. This tool is intended both for solving practical problems and for research and development in the field of basic and branch sciences.

The impact is carried out by unidirectional indirect synchronization of vibrational modes of the quasi-stationary thermal field (QST-field) of the substance within the Object, including modes of conformational vibrations of components (slave system), on the one hand, and the Sample (master system), on the other hand. "Mediated" means the presence of a connecting link between them - a system of optoacoustic excitations cyclically reproduced in the OCO resonator. The source of excitations are two or more light streams cyclically generated by a space-time light modulator (STLM) as part of the Control Complex. One of them, modulated by oscillatory excitations of the CCP-field of the Sample performs the role of information-control signal (IC-signal), the others, reproducing video recordings of the Objects, - the role of connecting signals, which are communicated to them by such partial components as photons forming EPR pairs (quantum entangled) with optical phonons and other quasiparticles in the CCP-field of the Objects.

The interrelation of slave systems through the mechanism of multiparticle quantum entanglement (MQE-entanglement) with the leading system of cyclically reproduced optoacoustic excitations common for them creates conditions for their resonance polarization, phase frequency autotuning (PFA) and, eventually, unidirectional synchronization with it, mutual synchronization and occurrence of quantum entanglement of their states. They form an oscillating coherent ensemble (OC-ensemble), a kind of germ of a "time crystal". When it overcomes a certain threshold state, it acquires the ability for autonomous existence and growth (autopoiesis) until it reaches a stationary state of background dynamic equilibrium. The external environment simultaneously serves as a source of energy in the IR range necessary for maintaining the stationary state of the OC ensemble and decoherence.

The process of formation of the "time crystal" occurs according to the following scheme of organization of cause-and-effect relations, where the arrow denotes the technological process, AND and OR are the operators of logical multiplication and addition, respectively: Light flux OR (CCP-field of Sample AND Sample substance) -> Modulated light flux (MC-flux) of Sample -> Video recording of MC-flux of Sample (Information and control signal) -> Video recording of MC-flux of Sample OR Video recording of light flux of Object (Linking signal) OR Control complex -> Video recording of MC-flux of Sample AND Video recording of light flux of Object AND Communication operator (Control system) -> Modified CCP-field of Sample AND (CCP- field of the Object AND the Object substance) -> Modified CCT-field of the Sample AND CCT-field of the target structures in the Object substance -> Modified state

of the target structures due to their resonant polarization and phase auto-tuning of the frequency of their natural oscillations -> Modified activity of the target structures AND Modified structure of the Object substance AND Modified CCT-field of the Object -> Change of the direction and intensity of the processes, occurring in the Object AND Change in the properties of the Object.

OK-ensemble can be considered from the position of different models of quantum systems of coupled oscillators. In the applied aspect it is preferable as a "time crystal".

"Time crystal" (OK-ensemble) at the level of its material subsystem performs the functions of multimode source of impulse activity (IA-source) of "echo" type, at the level of field component - quantum-field acting factor (efficiency factor), reproducing with this or that level of similarity CCT-field and properties of the Sample. The mechanism of its action is similar to the one used in its formation - one-sided synchronization of resonant excitations of medium components as systems of coupled quantum oscillators. Synchronization of oscillations reduces the mean-square deviation of kinetic energy of particles from the average one, which together with strengthening of their cohesion due to QMF entanglement should reduce the value of the index "activity", calculated on the basis of measurement of partial pressure of vapor in equilibrium with the solution (with condensed medium). Indirect evidence of this is the stability of the state of plants in the absence of irrigation (photo . . .)

The efficiency factor allows to regulate the activity of components in the composition of objects of living and non-living nature. The main component of living organisms is water. Water is a universal solvent of organic and inorganic substances, and the medium in which almost all vital biological reactions and interactions take place. The human body consists of 70 - 80% of water, in some plants there is up to 90% and more water. Therefore, the priority belongs to the application of technology to control the activity of water, using the possibility of obtaining its samples with different activity values.

Nowadays water activity index is included in the system of quality standards ISO 9001, which contains specific requirements to the supplier of goods and services. In the European Union countries its determination along with the indicators "moisture" (IV) and "concentration of hydrogen ions" (pH) is mandatory in the examination of a number of products, and in the U.S. the determination of aw is included in the instructions for quality control of food and drugs. Water activity (aw) is one of the main parameters of "barrier technology" and is widely used as a safety criterion in the concept of Hazard Analysis Critical Control Point (HACCP), which sets limits on the effectiveness of a number of factors, including aw, for the growth, survival and death of both "technologically desirable" and "technologically undesirable" microorganisms. Other methods can be used as "barriers", among which some authors specify methods of pulsating electromagnetic fields of high intensity, pulsating light radiation of high intensity. The proposed technology also realizes the method of pulsating (oscillating) fields, but the similarity is limited by this.

The field of application of the Instrument of post-industrial civilizations (PIC-Instrument) includes not only food and pharmaceutical industries, but also agriculture, ecology, etc. The first stage of its application is proposed for the cultivation of post-industrial civilizations. At the first stage it is proposed to use it in the cultivation of various agricultural crops. As an illustration, only some results of pilot application of the technology are given below.