

# **NONLINEAR (NLS) DIAGNOSTIC SYSTEMS (basic physics and principles of equipment)**

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At the present day, science and society as a whole have faced a problem of information overflow. Each day minor and major discoveries happen, each year dozens of new medical devices and systems appear. This is a good trend without question. However, it can cause us to drown in this ocean of information, and we lose sight of the whole picture.

Only a century ago, to set a diagnosis, a therapist required a patient's understanding of himself and the experience of thousands of years of medical history. Today to set a diagnosis, numerous expensive studies and analyses are required, but even with these, what helped a therapist make a correct diagnosis? It was that unexplainable sense we call intuition.

Out of 10 million bits of information only one is perceived, all the rest remain at the sub-consciousness sphere. Information from sub-consciousness sphere is extracted either on impulse or at the level of unusual altered states of consciousness: hypnosis, dreaming, meditation, after psychotropic agents intake, etc.

The result of numerous studies in this sphere was creation of brand new equipment capable of breaching a barrier between the conscious and the subconscious. This process (controlled by researchers) can give enormous amount of information about the world around.

The Institute of Practical Psychophysics has created analogue-free research equipment allowing to monitor condition of biological object by changes in wave characteristics of organism tissues, separate cells, chromosomes and even enzymes and hormones. Non-linear diagnostic systems are the most advanced information technology which can be considered the most amazing and prospective achievements of the modern natural science.

Diagnostic devices based on the study of torsion fields of biological objects are unique and have no analogues in the world. Numerous experiments which have been conducted by the Institute of Practical Psychophysics together with International Institute of Theoretical and Applied Physics headed by Academician Akimov, have shown a close correlation between the torsion fields and biological systems, specifying that such fields are used in biological systems as the means of both extracellular and endocellular interaction.

In simple words Academician Akimov's theory of torsion fields (or "terminal" in accordance with classification of T. van Hoven) may be explained in the following way. Modern physics operates with these four levels of substance: solids, fluids, gases and ionized elementary particles (plasma). Modern studies show that there is another level of reality that exists – the torsion fields.

According to modern concepts, electromagnetic fields are generated by charge, gravitational fields - by mass, whereas the torsion fields are generated by spin, i.e. an angular operating torque. Just as any object with a mass creates a gravitational field, any rotating object creates a torsion field. Torsion fields have a number of unique properties.

They transfer the information without transferring energy, they spread practically instantly to any distance, and they are not shielded by known environments. Besides, they have one more surprising property – they promote self-organization of substance, including living matter.

The now available theoretical and experimental base of the torsion fields' paradigm allows considering them as the same reality as electromagnetism and gravitation. Electromagnetic fields always contain a torsion component, which is an important fundamental factor.

The torsion field will occur both in an electrostatic field, and in an electromagnetic emission. Misunderstanding of this circumstance often resulted in that many phenomena generated by the torsion fields, were vainly explained by the electromagnetic phenomena.

So, how the biological systems distinguish and recognize the necessary information from the background noise and how the extracellular and endocellular communications occur?

This refers to sensational results achieved during longstanding studies by Moscow scientists Petr Garyaev and Georgy Tertyshny.

The research made it clear that DNA molecules, chromosomes and proteins are capable to generate coherent torsion emission, just like lasers. In other words, they are original transmitters with a recustomized wavelength. At the same time, they act as receiving antennas.

These very DNA properties ensure wave interchange of genetic information in an organism, significant part of which, as we have established, is stored in the chromosomal apparatus. The human body is one of the most complicated spin systems.

The complexity of its spacial-frequency torsion field is determined by a tremendous set of chemical compounds in the organism and the complexity of their distribution therein, and also by the complex dynamics of biochemical metamorphosis in the course of interchanging. Each person can be considered as a source (generator) of a strictly individual torsion field.

Each physically healthy person has a background right-hand torsion field. Extremely rarely, in people, suffering from severe diseases (basically of the oncological nature), the field sign changes to the left. The background static torsion field of a healthy person has a sufficiently stable value.

Non-linear (NLS) diagnostics is based on a new physics of quantum-entropic interactions, known as Quantum-Entropic Logic Theory (QEL). QEL theory is the first theory revealing physical essence of information interaction and describing interaction of mass, energy and information. The main postulates of this theory are:

1. Information is a material category, just like energy and mass of a system. [Previously existing physical theories describing information interaction in environment (information theory of Claude Shannon, cybernetics of Norbert Wiener) regarded information as some mathematical abstraction, they described basic laws of information exchange, but did not **reveal its physical essence.**]
2. Due to the fact that information is material it follows the conservation law. Information cannot disappear without a trace or appear from nowhere. Total amount of information in a closed system (a system, which does not exchange mass, energy and information with environment) – is a constant value.

In 1923 duke Louis de Broglie, a young French nobleman, assumed that wave properties are typical not only for light but for matter also. His arguments were that Einstein's equation

$$E = mc^2$$

links mass with energy, but on the other hand Einstein and Planck linked energy and wave frequency. Combining these two principles one may conclude that mass should have wave incarnation also.

Quantum-entropic logic theory expands de Broglie conclusions to all material mediums, including information. It shows that all matter display wave properties.

Quantum-entropic logic theory offered a formula for information wave radiation quantum, which links in with energy of a system through Planck constant.

Formula:

$$I = \frac{E}{\sqrt{h}}$$

(h – Planck constant)

Energy of any material system is linked with its level of complexity, in other words, with level of its structural organization. Level of complexity (structural organization) is the same essential quality of any material system as mass and energy of this system.

Information has even more universal character than mass, because a number of fundamental particles, such as photon and gluon have no mass at all. But all material objects, with no exceptions, have more or less complex structure, that is why we probably should speak not about quantum-wave dualism (where “wave” term means force fields only), but about trinity in description of material world, when information is included into equation together with mass and energy as a full member.

Thus it was postulated that information, like energy, is described by quantum equations. Also it says that there is a physical field of information and physical particles able to carry information.

Conclusions of Quantum-Entropic Logic Theory are the following:

1. Any material object of biological or non-biological nature increases its level of structural organization when it absorbs information from environment, i.e. it becomes more complex and stable.
2. Any material object of biological or non-biological nature decreases its level of structural organization when it loses information, thus it becomes less stable and more disorganized. For biological object loss of structural organization (information) means worsening of adaptive behavior, development of diseases and, finally, death of an organism.
3. There is always information noise around any destructing object, which loses information. The more intense destruction of biological object is, the more acute course of disease is registered and the higher level of information noise around that object.

Therefore if we measure level of information noise around biological object we will be able to judge about degree of destruction speed in this object; and if we measure frequency

properties of noise background we will learn what tissues in an organism were destructed and changed more than others, because every tissue in a living organism has its specific radiated spectrum different from the others.

Elementary particles have 2 values of spin. Therefore torsion fields are divided into 2 types: right-hand polarized torsion (information) field and left-hand polarized torsion (entropic) field.

Influence of right-hand polarized torsion (information) field to any physical object, including biological ones, improves level of its structural organization thanks to information saturation. Effect of left-hand polarized torsion (entropic) field is related to worsening of structural organization of any material object due to loss of information.

But why these fields influence differently to all material objects including biological ones? The thing is that our Universe is characterized by global asymmetrical distribution of material particles.

In our world negatively charged electrons prevail over positively charged positrons and positively charged protons prevail over negatively charged hadrons, which results in significant prevalence of matter over anti-matter in our Universe. Also great prevalence of left-hand polarized particles over right-hand polarized particles is noted in the Universe.

Information exchange, expressed in amount of information transferred from one system to another, may be relatively efficient only with more or less equal ratio of left-hand and right-hand polarized virtual particles. It appears from this that the more right-hand polarized particles in a system are, the more information it can contain.

Thus information capacity of any system is directly related to increasing gradient of right-hand polarized torsion field in relation to left-hand polarized field.

We cannot register torsion fields directly due to their great penetration power. We can judge about effect of torsion fields to a biological system by indirect signs. We already said that torsion field is a component of magnetic field. Torsion field, as we know, has 2 types of polarization – left-hand and right-hand; magnetic field also has 2 poles – north and south. In accordance with laws of physics left-hand polarized torsion field will be generated around north magnetic pole.

At the same time right-hand polarized torsion field will be generated around south magnetic pole. Permanent magnet always has two poles – north and south: where north magnetic pole is universal destructor – when it influences a system it will lose information; and south magnetic pole, which in its turn will be the universal protector – accumulating information in a system.

Therefore all information processes influenced by permanent magnetic field in biological systems will have only one direction – from N pole to S pole.

Any biological system (cells or tissues of an organism) may be regarded as cybernetic device. In accordance with cybernetics laws, a system will function if two signals are present: input and output. At the same time we can be unaware about character of processes inside the system itself. In order to evaluate condition of the system we should evaluate input and output signals of the system.

In accordance with QEL, input signal of a system (related to receiving of information) may be correlated with effect of south magnetic pole; output signal of a system (related to loss of information) – with effect of north magnetic pole.

If a system is integral, level of noise in the system is close to zero, so in this case input and output signal will be relatively similar. If a system is in the stage of destruction, we will see a gap between input and output signals, it is called dissociation of a signal. The higher dissociation is the higher level of information background noise around destroyed system and the higher speed and wider extent of system destruction. Frequency analysis of dissociation in graph spectrums allows us to understand what tissues are being destructed faster and extensively.

According to S. Nesterov - T. van Hoven's QEL theory, the informational interchange between any systems is distant, associative and selective, because of the fact that oscillation quantum have energy, adequate to the energy of destruction of a link of an elementary system structure.

The QEL Theory provisions allow stating, that in biological systems with pathological processes some unstable (metastable) states may occur, at which the probability of system destruction increases greatly. The hardware-software system «Metatron» functions on the principle of amplifying of the initiation signal at disintegration of metastable systems.

From the physical point of view, «Metatron» represents a system of electronic oscillators, resonating on a length of a wave, the energy of which is adequate to the energy of destruction of the predominant links supporting the structural architecture of the examined organism.

The hardware-software system developed by the Institute of Practical Psychophysics generates the preset bioelectric activity of neurocytes of brain, amplify selectively the signals usually hardly noticeable against statistical fluctuations, and finally to retrieve and decode the information containing in them. Equipment in a certain manner «takes the bearings» of such emissions by place of their origin in order to decode and record the on a computer screen where the virtual model of an organ is created in certain colors.

If, in accordance with the QEL Theory, you present entropy values of any system as colors of spectrum, such colors will vary from light yellow (at minimum entropy values) through orange to red and purple, almost black (at maximum entropy values). Finer theoretical calculations allow to single out a number of stationary conditions corresponding to a certain entropy potential.

Computer models give us a multidimensional image of internal organs in any required perspective. The color icons placed on the image, allow us to locate pathological process on a model of an organ. By comparing the color gamma of the icons and their location on a computer model of an organ, and also their change dynamics, one can judge about the processes of destruction of biological structures and give health condition forecasts.

In order to specify the pathology area a user investigates multidimensional and scalable models of organs, rendered by a computer on a screen, until he localizes a pathological locus with an utmost accuracy.

The basic idea at the development of this equipment was the hypothesis that the human body has a torsion informational skeleton, capable to react to the effects of an external emission.

In 1950 in Germany Dr. Reinhold Voll discovered and developed an electrical testing system based on the acupuncture points of a human body. Voll's method was the first hardware method of organism's energoinformational condition testing. It was carried out by reading of electromagnetic conductivity values from end points of acupuncture meridians of a human body using a probe. Results of a study (in terms of digital and graphical indices) can give a notion of inflammatory, dystrophic or atrophic pathology presence in a studied meridian and corresponding organs.

Unlike the Voll's electropuncture diagnostics method where the energy potentials of the organs and systems are measured via bioactive points, which indirectly (and often with a significant error) mirror an organ's condition, with Non-Linear Diagnostics (NLS) developed by the Institute of Practical Psychophysics, the evaluation of the organ's condition is done immediately based on the resonant amplification of investigated organ's emission and reading the parameters non-contactly by using trigger sensors.

Each organ and each cell have their own, inherent specific oscillations, which are stored in the computer memory, and can be displayed on screen as a certain diagram, which specifies the conditions of informational interchange of an organ or tissue. Any pathological process also has its inherent individual diagram.

The computer memory contains a significant amount of pathological processes with the allowance for the degrees of manifestation, age, sex and other variations. Having taken the frequency characteristics from a biological subject, the research equipment can compare them by magnitude of spectral similarity with reference processes (healthy and pathologically changed tissues, infectious agents) and reveal the closest pathological process or a tendency to its development. In case of combined processes the virtual diagnostics mode allows performing differential diagnostics of each process.

Quantitative evaluation of vectors realization of right- and left-hand polarized spins (in other terms of input and output signal) and a character of their interaction within a specific object makes possible to evaluate a level of the object's internal entropy and to model all possible phase states – from the most stable to the most unstable, expressing it in terms of statistical coefficients.

The most significant contribution into creation and development of equipment for NLS method was done by Russian scientists, in particular by Academician Svyatoslav Nesterov. Using these preliminary studies the Institute of Practical Psychophysics, headed by corresponding member of Academy of Medical and Technical Sciences Vera Nesterova, has manufactured several lines of hardware-software systems for non-linear torsion diagnostics of Metatron class, which were introduced into practice with the help of Academician Anatoly Akimov. These hardware-software systems allow to evaluate the extent of entropy at various levels: namely at the levels of organism, systems, organs, tissues, cells, sub-cells and molecules.

Scientific studies carried out in the last century have proven high biological significance of low-frequency range of wave oscillations from 0.7 to 13 hertz. In this range, central harmonics of functionally specialized cells of human and other mammals are located. Using them as a situational modulating stress at evaluation of quantitative realization of spin momentum of various vectors allowed to differentiate functionally different cells and identify their possible phase states.

The system includes two expert subsystems, showing quantitative character of right- and left-hand polarized spins vectors ratio relating to both separate models of an organism (the first subsystem) and separate fixed points on a specific models (the second subsystem).

The basis of the first expert subsystem functioning is a study of biological response of a certain region of an organism (from single molecule of protein to the whole organism) to a standard modulating frequency range (1.8 – 8.2 Hz) in the context of each of two vectors prevailing – right- and left-hand polarized spins. It allows to get a set of 18 information points (9 points of right-hand polarized spin and 9 points of left-hand polarized spin).

These points are ranged in relation to inversed image of a white noise as a carrier frequency, with maximum amplitude of 256 Db. Combinations of these 18 points in relation to the mentioned amplitude, stated in relative units calculated to two decimal places, are highly-specific. To ensure optimal perception by a user, these points are linked together to form diagrams (diagrams of color Fleindler's scale). A diagram of right-hand polarized spin is shown in red color, left-hand polarized – by blue color. Studies have proven that for certain functional types of organism's cells, each modulating frequency is a central harmonics among other 8 modulating frequencies.

Comparing of real objects images with corresponding models of organopreparations (etalons of optimum organ/cell values) allows to detect the most pathologically changed systems and organs in the whole organism. Blue diagram of left-hand polarized spin shows a degree of functional activity of the analyzed object, when red diagram shows degree of its restorability.

Graphical representation of researched models is the main expert subsystem of the device and it provides the operator the maximum amount of diagnostic data.

The second expert sub-system is the analysis of fixed points located on studied models. It allows to evaluate a degree and a vector of right- and left-hand polarized spins (torsion fields) balance of a separate point, and thus to present the model in a structured fashion, in other words to detect pathologically changed areas and areas maintaining the function of the researched model.

To fulfill this goal we use a matrix of 6 possible phase states, with the initial first phase state representing an ideal quality of physiological systems. Therefore physiological phase states of compensatory capabilities are within the range of 1– 3 phases, pathological ones from 4th to 6th phase.

Taking into account above mentioned conditions, we created a software database containing models of optimal states of organs, tissues, cells, chemical and biological molecules, images of stable pathological conditions, models of helminthes, animalcules, microbes, viruses, allergens and food products.

Application of vegeto-test allows to simulate a degree of possible correction with various therapeutic agents and to create an individual program for organism restoration in real time mode.

Application of Meta-therapy provides optimization of functional state of specific biological models in real time mode, but when it is applied in “destruction” mode, it suppresses functional state of microorganisms by creating of high-voltage torsion fields in them.

Application of multiple factor analysis (spectral-entropic analysis) allows to evaluate quantitative presence of separate chemical and biochemical agents in a certain environment. Within the given range of upper and lower values the system carries out 7-step ranged evaluation of separate elements in relation to the chosen model (it can be an organism, an organ, a tissue and so on).

The system evaluates entropy degree of interatomic bonds in complicated molecules of albuminous compounds and thus shows the level of their functional capabilities or the level of potency.

Hardware-software systems of nonlinear diagnostics “Metatron” may be used in clinics and in private practice rooms. It is reasonable to use the system in sports and military medicine, in homeopathic and psychological practices, environment protection programs and many others.

Using of the system allows to make a diagnoses at the levels of a molecule and the whole organism, to identify origins of a pathology (whether it was helminthes, microbes, fungi, viruses, allergy or other factors), to create adequate correction program with use of allopathic, homeopathic or phyto-preparations, nutraceuticals and food products, to carry out real-time correction of a functional state of an organ, tissue or a cell by optimizing its spin vector balance.

On the basis of previously acquired vector parameters from particular organs, tissues or their regions, specific cells and their areas, the system can create original information preparations (so called metazodes) with direct effect.

To create a metazode various models can be used as the source data, for example models of perfectly healthy conditions and pathological states, models of various etiological factors (microbes and so on), therapeutic agents (allopathy etc).

As we told before, testing of organism’s condition with Metatron system is carried out by means of resonance amplification of a studied organ oscillations and reading of data by contactless way with trigger sensors.

What is the basis of trigger sensors effect?

For the first time, distant effect of interaction between objects of animate and inanimate nature, in other words transfer of information impulses from a human to a device, was registered in experiments carried out by Valery Kravkov in the 20’s of the last century. Reactions of various semiconductor structures to human influence were studied under guidance of Professor Vyacheslav Togatov. It was proven by experiments that human brain can influence a sensor of a device without any wires.

Devices of “Metatron” class can evaluate level of information background noise around destructed biological objects. Trigger sensor is a device that registers information background noise from biological objects. Trigger sensor is a broadband noise generator. Special oscillator diode is used as noise generator. This generator, after it adjusts to resonance frequency of biological object, allows to get frequency-resonance characteristics of noise from researched 8



object in standard range of frequencies. Received signal may be sent to oscillator or computer for further frequency spectral analysis.

Creators of the system used remote biological feedback to receive brain activity signals and transformed this information into pulse sequence by means of trigger sensor.

Another element of the system (cadistor) is designed to work with a patient directly to amplify effect of a trigger sensor. It consists of semiconductor carbonic monocrystal which acts as an optoelectronic element when it is influenced by a laser. When the laser emission targets a cadistor, a temporary short circuit happens in a semiconductor and at the same time a certain amount of energy is released. Repeating of this process with high frequency causes periodic accumulation and release of energy. It was found that preferable laser wavelength is 630 – 680 nanometers. Activation of periodic illumination of a cadistor by laser emission results in periodic release of energy which results in increasing of intuition potential of a patient.

In the described situation both electromagnetic and torsion component of laser emission are targeted to a patient. To shield electromagnetic component, a microwave resonator is used; it prevents penetration of the electromagnetic component and at the same time shapes and directs torsion component as the only irritator to affect a patient.

One of the main elements in Metatron system is N and S magnetic inductors, which activate certain areas of brain cortex.

Generator.

The Institute of Practical Psychophysics manufactures systems with generators of 860 MHz, 1.4 GHz, 4.9 GHz frequency. Recently it started to manufacture high-frequency stationary HSS with frequency of 40 GHz.

The higher frequency of generated field is the higher resolution of HSS. HSS with 4.9 GHz generation frequency has 5-10 microns resolution, but HSS with 40 GHz generation frequency has resolution of 100 Å (angström), which allows to evaluate ultrastructure of cell, chromosome, DNA molecule and fulfill wave correction of genome.

Why does high frequency of HSS result in higher resolution capability? Each organ in an organism is a wave oscillator with its own specific frequency. There are few large oscillators in an organism – brain, liver and other organs. Maximum wave amplitudes of these oscillators, when they are overlaid, form a unique structure – known as the energy-information frame of a human organism.

When energy-information frame is projected to the human body it gives a geometrical grid picture. For the first time, this grid was described by ancient Chinese medics – known as the Jing- Luo meridian system. Intersection points of wave maximum amplitudes from various biological sources (grid points) are called acupuncture (biologically active) points. Acupuncture points exist not only on a surface of human body but inside (and on the surface) of every organ.

Laws of physics state: the higher generation frequency is the lesser wave length. Therefore if we increase generation frequency we will decrease proportionally size of every cell in energy-information frame of human organism.

We can evaluate condition of every specific point on an organ relying on characteristics of biologically active points only, which have strictly individual wave characteristics (frequency, porosity, signal amplitude and wave length) – by maximum topological approach of researched

point to biologically active point, which becomes lesser with decreasing of grid cell. Thus we see that the higher frequency of a generator, the higher resolution capability of a device.

The studies have proven that patient's influence to a trigger sensor is more reproducible on a chopping frequency of electromagnetic impulses close to theta-rhythm of patient's brain waves. This frequency oscillates upwards and downwards depending on a health condition of a patient. An interrelation between frequency oscillation and pathological states of organism's systems, organs, separate cells and chromosomes fragments was revealed.

This interrelation allows to diagnose various pathological states. For example diagnostics of intravertebral disks protrusion, pancreatic diabetes, bone fractures and traumas, blood vessels thrombosis, acute and chronic hepatitis, cirrhosis and many other pathological states. It should be noted that such diagnostics can be carried out using subconscious level of brain function, in other words, irrespective of a patients influence.

Even in those rare cases when clinical symptoms and signs are typical, NLS-diagnostics method brings additional information about the extent of affection and allows to make forecasts. In the majority of cases it has a principle meaning for diagnosing and therefore for choosing of proper treatment course.

Academician Svyatoslav Pavlovich Nesterov is the inventor of NLS diagnostics; he invented a trigger sensor in 1988, and thus found the idea of the system. Right away, work to develop and improve NLS-diagnostics systems was started. A period from 1990 to 1995 was characterized by clinical tests of the first systems. Late 90's were marked by quick growth of commercial production of systems and a great advance in quality of acquired results.

Non-linear diagnostic method is still being developed. Diagnostic methods improve very fast, so the versions of the system are renewed every six months. By means of using of new systems with digital trigger sensors NLS-diagnostic became not only faster, but their quality was increased also. It is obvious that dynamic methods, such as 3D visualization of research results, soon will be put into practice.

The Institute of Practical Psychophysics continues the search of new methods of investigation on the basis of non-linear analysis systems. The results are very promising. Differing from computer tomography and NMR, NLS analysis does not require fields of high intensity.

Invention of a new generation of computer non-linear scanners for Metatron systems, in which multidimensional virtual visualization of investigated object is applied, allowed to increase significantly the efficiency of the NLS method itself and extend its field of application.

The peculiarity of NLS multidimensional visualization is the multidimensional character of scanning. The results of such scanning represent a single array, which facilitate reconstruction of multidimensional virtual pictures of anatomic structures of the investigated object. As a result virtual NLS can be widely used, in particular for angiographic studies with three-dimensional reconstruction of vascular structures.

Preparation of images for visual analysis is carried out by means of "4D TISSUE," an original technology developed by the Institute, that allows not only getting of virtual multidimensional pictures of anatomic and histological structures, but also marking of a researched biologic tissue with color – so called "additional dimension" and visualizing of bones, soft tissues and vessels simultaneously or in any desired succession.

3D-visualization system is intended to reveal obstructive processes of upper respiratory tracts, inflammatory processes in a gullet, stomach and large intestine, atherosclerotic lesions of large vessels, illnesses of accessory sinuses of nose, urinary bladder and vertebral canal.

Data acquired with 3D “virtual NLS-scopy” allows choosing optimal place for biopsy in advance and determine extent of surgical intervention. This method can be used both independently and be a link between tomography, endoscopy and NLS-studies.

NLS method is being improved not only by means of introducing of new technical inventions, but by new ways of application. Simple surgical manipulations, such as biopsy are carried out with the help of ultrasound, fluoroscopy and computer tomography for a long time. Now biopsy can also be controlled by NLS.

The cost of NLS diagnostic systems is much lower than the cost of other methods of hardware diagnostic. It promotes wide application of the method in countries with low income of population.

Comparing with other methods of hardware diagnostic, NLS allows getting the image closest to pathologoanatomic one. This, together with safety, promotes quick development of NLS diagnostic method.

The first decade of the new century is marked by considerable extension of NLS-technology’s diagnostic features, first of all by means of new technologies introduction and application of modern computing equipment. Such concepts as NLS-ultramicroscopy, non-linear spectral-entropic analysis, have become customary in many clinics.

Together with development of inexpensive portable digital NLS-systems, scope of their application has been extended also; improvement of communication means capabilities will allow to transmit live pictures to medical consulting centers from any place on Earth. Pragmatic market of 3D-visualizing diagnostic technologies is formed by means of harmless nonionizing methods, allowing to fulfill multiple dynamic researches, i.e. NLS-technologies undoubtedly comes to the fore.

To achieve significant progress in quality of NLS pictures, considerable increase of amount and accuracy of contained information is required. Therefore, the main objective of the technology’s development, is increasing the amount and accuracy of diagnostic information in an NLS picture.

Nowadays, new approaches to acquiring and analysis of information can be divided into those related to visualization in three-dimension mode and those related to increasing of devices’ generation frequency, which is directly associated with increasing of resolution during research of organism tissues’ ultrafine structures.

In identification of NLS-systems’ operating characteristics high-frequency generators have principal meaning. Major part of the most significant achievements in image quality improvement and in extending of our clinical possibilities is related to innovations in development of non-linear generators.

Working frequency ranges of modern generators are within 1.4 – 4.9 GHz, which allows us to research almost all internal organs, anatomical masses and tissues with up to 30 micron resolution. However non-invasive visualization of ultrafine structure of tissue at separate cell organelles and DNA fragments may be hampered. That is why technology of high-frequency non-linear generators manufacturing have changed greatly.

At the present time, together with International Academy of Non-Linear Systems, super high-frequency non-linear generators with 40 - 100 GHz operating frequency were developed and clinically tested. This allowed the technology to reach 100 angstrom resolution.

These technologies, which are not yet widely applied, are already called “NLS-ultramicroscanning”. Most probably in the near future, thanks to development of this area, we will be able to look at epithelial and endothelial tissues at sub-cell level more closely and to research and correct clusters of reborn cells.

The main problem of torsion fields’ influence to a cell ultra-structure and DNA helix is to find an extremely precise instrument which, similar to laser, could influence DNA molecule structure with diameter less than 2 nanometers.

Creation of such unique instrument became possible only after super-high-frequency torsion generators were developed. These generators have additional feature of wide-pulse signal modulation to generate field oscillations with parameters peculiar to living cell in order to restore its regulatory mechanisms.

Another promising area of NLS-technology development is creation of non-linear telemedicine monitoring system. A remarkable opportunity of this method lies in enhancing of the sensitivity of diagnostics and expanding the system’s functionality due to technologically remote diagnostics (telediagnosics) in asynchronous mode of a dialogue between a therapist and a patient, when they can communicate with each other interactively regardless of the distance between them.

The system, offered by the Institute of Practical Psychophysics, provides opportunity to ensure an audiovisual contact between a patient and a doctor during torsion diagnostics when doctor is at great distance from the patient.

The equipment can be applied in clinics, diagnostic centers and scientific research institutes to carry out distant diagnostics of patients using mobile terminals (in field conditions, in the mountains, at sea).

The array of the obtained data is sent through a specialized server to a medical advisory center with the observance of data safety requirements.

More and more clinical therapists realize necessity to master NLS-diagnostic equipment, because a need in properly educated experts in this field is obvious. At the same time among traditional medicine specialists there is a tendency to pay more attention to researches with computed X-ray imaging and magnetic resonance imaging.

That is why NLS-technologies, unfortunately, are still hidden among more orthodox methods of diagnostics. Clinicians will be ready (in many aspects are already ready) to improve their diagnostic possibilities by using of NLS-technology, often without X-CT, MRI and radionuclide methods.

Nevertheless, only in strategic partnership of NLS-diagnosics experts, radiologists and clinicians may be found a key to optimal diagnostic and healing application of this, in all senses, original and efficient medical technology.

The Institute of Practical Psychophysics is the only company in the world that deals with design, development, manufacturing, sales and servicing of hardware-software systems for non-

linear diagnostics, which is confirmed by many Russian, European and American certificates and patents.

The author owns the following certificates:

- United States Patent “TORSION DIAGNOSTIC SYSTEM UTILIZING NONINVASIVE BIOFEEDBACK SIGNALS BETWEEN THE OPERATOR, THE PATIENT AND THE CENTRAL PROCESSING AND TELEMETRY UNIT” No.: 6,549,805 from Apr. 15, 2003

- United States Patent “DIAGNOSTIC APPARATUS WITH BIOFEEDBACK FOR DIAGNOSTICS OF PATIENTS” No.: US 2010/0081959 A1 from Apr. 1, 2010

- The Institute of Practical Psychophysics has completed FDA registration No.: 3009475597 for a medical device with biological feedback.

- The Institute of Practical Psychophysics has successfully completed certification for compliance with requirements of ISO 9001:2000 for design, development, manufacturing, sales and servicing of bio-resonance diagnostics devices on March 15, 2007, in Bureau Veritas Certification (BVQI) certification body with accreditation in UKAS (GREAT BRITAIN), ANAB (USA), DAR (GERMANY): accreditation in 31 countries, including Japan and countries of Southeastern Asia, Canada.

- In 2007 the IPP successfully completed certification audit by TUV Rheinland Group for compliance with requirements of international standard ISO 13485:2003, medical directive 93/42/EEC MDD Annex V and European Union regulations – CE.

- In 2013 The Institute of Practical Psychophysics has successfully completed re-certification for compliance with EN ISO 13485:2010 "Medical devices - Quality management systems" EN ISO 13485:2012 (No.: MD583050 from 21.01.2013) and MDD 93/42/EEC - Medical Device Directive (Certificate No.: CE583051 from 25.04.2013) in British Standards Institution.

- In Russia, hardware-software system Metatron is registered in State register of medical equipment by Federal department of healthcare and social development supervision. Registration certificate issued in August 19, 2005, medical technology called “Method of screening diagnostics with hardware-software system Metatron” was approved on December 29, 2006.