

BBMEASURING ENERGY FIELDS

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Introduction

In the history of Science, the development of a new instrument has always resulted in a new understanding of reality. Microscope, telescope, X-rays, tomography, ultra-sound - without these instruments modern science is powerless. Now a new instrument has been developed - Computerised Gas Discharge Visualisation technique (**GDV**), based on the well-known Kirlian Effect. In parallel with GDV the term **EPC – Evoked Photon Capture** – is under circulation. Modern scientific means such as electronics, optics, CCD matrix and image processing with powerful computers have created a new base for introducing this technique into scientific practice. The EPC technique proved to be effective in rapid diagnostic evaluation of the health and psycho-emotional state of patients in conventional and complementary medicine. This feature of the technique, coupled with its ability to identify the bases or indications of developing diseases and to monitor the influence of different drugs, medicines, exercises and meditation is of great importance in gaining insight into pathways to healing. Promising results were obtained in express-diagnoses of cancer by evaluating the dynamic of changes of the pictures. Examples of experimental results and conceptual scientific approaches are presented in the technical background of this paper.

EPC technique

The EPC camera is presently the state-of-the-art in Bioelectrography [1]. It utilizes a high frequency (1024 Hz), high-voltage (10 kV) input to the finger (or other object to be measured), which is placed on the electrified glass lens of the EPC camera. Because the electrical current applied to the body is very low, most human subjects do not experience any sensation when exposing their fingertip to the camera. In practice, the applied electric field is pulsed on and off every 10 microseconds, and the fingertip is exposed for only 0.5 seconds. This causes a corona discharge of light-emitting plasma to stream outward from the fingertip. The light emitted from the finger is detected directly by a CCD (charge-coupled detector), which is the state-of-the-art in scientific instruments such as telescopes to measure extremely low-level light. The signal from the CCD is sent directly to a computer, and software analysis is done to calculate a variety of parameters that characterize the pattern of light emitted, including brightness, total area, fractality, and entropy. The software can also provide color enhancement to enable subtle features such as intensity variations of the image to be perceived. The

underlying principle of camera operation is similar to the well-known Kirlian effect [2] but modern technology allows reproducible stable data with quantitative computer analysis. Purposeful investigations allowed the discovery of the parameters that are optimal from the point of obtaining critical information on the biological object's state with the minimum of invasiveness. These findings are described in more than 200 research works in the international scientific literature, 12 patents, 6 books in English, French, German, Italian, Russian, and Spanish.

This biophysical concept of the principles of EPC measurements is based on the ideas of quantum biophysics [3]. This is a further development of well-known ideas of A. Szent-Györgyi concerning the transfer of electron-excited states along the chains of molecular protein complexes [4]. The EPC technique measures the level of functional energy stored by the particular systems of an organism. This level is defined by the power of the electron-excited states and the character of their transport along the chains of albumin molecules. The level of functional energy is correlated with health status, but it is only one of many of the components that define health. It works together with genetic predisposition, psycho-emotional states, environmental loading (food, water, air, ecology) and other factors. This approach may be associated with the oriental notion of the energy transfer along meridians.

In assessing human subjects, the BEO-grams (EPC emission patterns after computer processing) of all ten fingers are made and analyzed. A typical measurement from a normal healthy subject is shown in Fig. 1. All 10 BEO-grams from the fingers then undergo analysis via another software program creating the model of Energy Field around the body and the diagrams showing the energy distribution in the various organ systems (fig. 2-3). This is based on the map correlating the human fingers with different systems and organs of the body in accordance with Traditional Chinese Medicine (TCM) approach. This map was first proposed by Peter Mandel [5] in Germany and then further developed by Dr. Korotkov and his team.

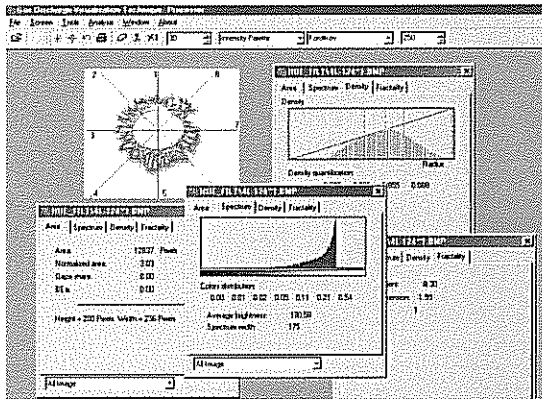


Fig.1. EPC images of the human finger with calculated parameters.

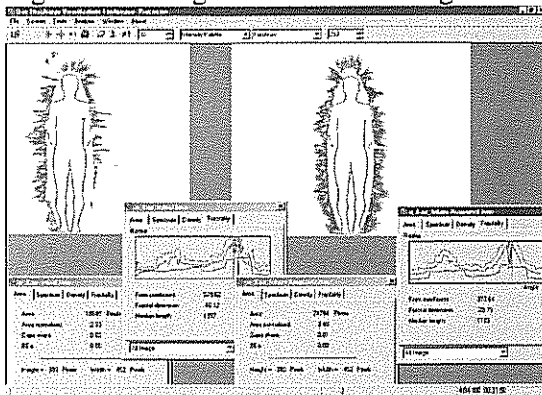


Fig.2. EPC images of the Human Energy Fields (before and after acupuncture treatment) with calculated parameters.

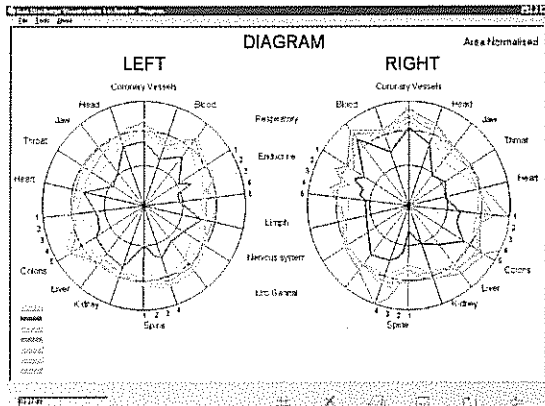


Fig.3. Diagrams showing the energy distribution in the various organ systems.

EPC/GDV bioelectrographic systems have had practical applications in the following main areas:

Medicine [6,7]

- analysis of a person’s psychological state;
- analysis of a person’s psychological and physiological state;
- analysis of the body’s autonomous state and individual functional systems;
- monitoring the body’s reactions during therapy;
- assessing the probability of organic systemic abnormalities;
- the presence of changed states;
- assessing the risk of allergens according to EPC parameters of the glow of blood samples.

The EPC system is certified by the Ministry of Health of the Russian Federation as a medical device. More than 200 papers are published on the medical aspects of EPC analysis.

Sport

- assessing the level of emulative alertness of sportsmen. By order of the State Agency for Physical Culture and Sport, a EPC system is being fitted in the colleges of Russia’s Olympic reserve.

Research into fluids and materials

- clarifying the difference between natural and synthetic oils [8];
- assessing the quality of cosmetics [9];
- researching human hair [10];
- researching homeopathic remedies [11];
- researching precious stones and their influence on people [12];
- researching geoactive zones and their influence on people [13].

Such a wide range of applications is conditional on the high sensitivity of the EPC method to changes in the emissions parameters of the researched object, located in a high-intensity electromagnetic field, and the methods used for processing information based on modern theory approaches and artificial intelligence methods.

Research into the area of EPC bioelectrography continues actively. Each year Ph.D. theses are defended, and collections of scientific works are published. Each July each year, St Petersburg – one of the most beautiful cities on earth – hosts the international scientific conference *Science, Information, Spirit* which welcomes doctors, scientists and specialists from dozens of countries. Over the last 5 years, these conferences have been held under the aegis of the International Union of Medical and Applied Bioelectrography (IUMAB). This Union brings together researchers from 62 countries studying the practical implementation of the bioelectrographic methods, which are growing in number every year.

What does the EPC method measure in physical terms?

The EPC method is based on the stimulation of photon and electron emissions from the surface of the object whilst transmitting short electrical pulses. In other words, when the object is placed in an electromagnetic field, it is primarily electrons, and to a certain degree photons, which are 'extracted' from the surface of the object. This process is called 'photo-electron emissions' and it has been quite well studied with physical electronic methods. The emitted particles accelerate in the electromagnetic field, generating electronic avalanches on the surface of the dielectric (glass). This process is called 'sliding gas discharge'. The discharge causes glow due to the excitement of molecules in the surrounding gas, and this glow is what is measured by the EPC method. Therefore, voltage pulses stimulate optoelectronic emission whilst intensifying this emission in the gas discharge, owing to the electric field created.

What does the EPC method measure in biophysical terms?

So the EPC measures the stimulated optoelectronic emission of a biological object. During the measurement process, an electric current flows through the circuitry of the EPC device. Thanks to the construction of the device, the current is a pulse current and is very small – micro amps. This is why the current causes no substantive physiological effects and is totally safe for the human body. But what kind of current is this in biophysical terms?

An electric current can be dependent on the conveyance of electrons or ions. When voltage pulses lasting longer than a few milliseconds are transmitted to the cutaneous covering, tissue depolarization takes place and ions are conveyed. This is why a number of electro-physical methods, such as electroencephalography or electro-acupuncture, tissue polarization due to overlapping of electrodes poses a major problem and is resolved by using special pastes or gels. The EPC method uses short pulses, so depolarization does not occur and ionic currents are not stimulated.

What does the EPC method measure in physiological terms?

The working of all the organs and systems is regulated by the central nervous system (CNS) and the autonomous nervous system (ANS).

As long as all systems and organs are working in harmony, in unison, following the same programme, the body is at its optimal functioning level. Control and direction are ensured by two fundamental mechanisms:

- autonomous control by the nervous system (ANS), including neurohumoral regulation of activity;
- electron control through active forms of oxygen in the blood.

There are many experimental data which prove that the EPC method measures the activity of the autonomous nervous system. This is proved by statistically significant correlations with the results of the measurements of the variability of cardiac rhythm [14], of systolic and diastolic pressure [15], perspiration through the skin [16], and the stress level [17].

There is every justification for affirming that the parameters of EPC images reflect the activity of the autonomous nervous system and the balance of sympathetic and parasympathetic sections of this system.

What is the sensitivity of the EPC method based on?

The autonomous nervous system is the main indicator of the body's reaction to external and internal impacts – from changes in the weather, chemicals in food and the efficiency of

oxygen absorption to emotional worries. All of these processes are processed by the sympathetic and parasympathetic nervous system and are reflected on the parameters of the cutaneous covering. The electrical resistance of the skin changes, both as a whole and at electro-puncture points, the capillaries narrow and widen, and there is an emission of organic molecules through the pores, the nature of the transfer of electrons to the connective tissues also changes. All of these processes influence the emission of electrons from the skin and the development of electron avalanches, which is reflected in the parameters of the EPC-gram.

Many years of research into the physics and biophysics of the visualization processes have made it possible to discern optimal conditions for the development of all processes, which made it possible to obtain sensitive but well-reproduced EPC images.

The influence of mental, emotional and spiritual processes on EPC/EPC images.

An interesting aspect of EPC applications is the research of consciousness processes. Many years of experimentation have made it possible to identify bioelectrographic correlates of altered states of consciousness (ASC) [17]. This is a particular state, which a person enters during meditation, mental training, religious ecstasy, or when under the influence of drugs or psychedelics. For many years we have been measuring Russian extrasensories, Candamblier priests in Brazil, participants of the Ayurbasko ceremony in Peru [1,2], Chinese Tsigun masters, sensories in Germany, the USA, Slovenia [6]. And almost everywhere we obtain signs characteristic of ASC. Similar results, using the most diverse devices and methods, were obtained in the laboratories of different countries [18]. This shows that the processes of consciousness are apparent on the physiological processes measured by the EPC method.

We do not intend in this book to discuss the philosophical aspects of the process of researching consciousness. That could be the theme of an entirely separate, specialized book. Let us look simply at the opinions on which our work is based. We support the idea that consciousness is a category of a different space-time continuum which does not belong to the material world. The principles of work of consciousness are to a large extent modelled on the quantum mechanics paradigm, but clearly this is but a superficial analogy. We are still a long way from understanding the working mechanisms of consciousness, taking into account not only its individual manifestation in each person, but its collective processes [Korotkov, 2001]. Human consciousness is a process of interaction between a person and a collective field, thanks to which new ideas are formed, and the field is the place to which they return, making a contribution to the collective mind of humanity.

With physical devices we measure physical processes, i.e. processes of the material world. This is connected to biology as much as to physics and chemistry. That is why we can only measure the **influence of consciousness on physiological or physical processes**. This influence is conveyed along several channels, primarily through the cerebrum, which takes an active part in thought and emotion processes. The brain produces a cascade of chemical substances which influence physiological processes, and also the central nervous system models the work of the autonomous nervous system [19].

We have already left behind the idea that the brain produces consciousness like the liver produces bile. It is better presented as a receptacle which reacts to the signals of the surrounding space, including signals from the collective field. Hairs can act as the antenna of these signals, as they react to the external field and transmit these signals to the cutaneous covering, possible with some intensification. The numerous results of our experiments testify to this [10].

The heart is another organ which takes part in the processes of consciousness. This is not merely a pump for blood, but an organ which regulates the blood flow and, accordingly, oxygen, in all areas of the human body. There are data showing that after a heart transplant, a person

takes on many behavioural characteristics of the donor. So we can conclude that the heart, at least, has a memory, i.e. it takes part in consciousness processes.

The experiment processes measure the influence of consciousness on physiological processes, and in this regard the EPC method is very sensitive as it reacts to subtle changes in the working of the ANS. This makes it possible to register subconscious and emotional processes.

Another method is the registration of the influence of human consciousness on physical sensors. One of the most recent is water, or specially constructed systems. Many experiments [Science of Whole Person Healing, 2004] have proved that such an approach is highly effective.

Modern science has only just begun to research consciousness. Following the remarkable insights of Jung and Freud, a significant process was set in motion to study the brain's neurone mechanisms, in particular using modern methods of computer mapping. Yet we are still only in the early stages of the process of researching consciousness, and the most important thing at the moment is the set of experimental data. Their meta-analysis at a specific stage will provide an awareness of new concepts and lead us toward a new understanding.

Energy fields, meridians and chakras

All of the principles cited are based on concepts of Western science and Western medicine. The disenchanted reader interjects, "But where is all the charm of fields, energies, meridians and energy channels? For all those years we studied the Kirlian effect and EPC so as to be able to measure these mysterious yet appealing parameters. Has all that really been forgotten and lost?"

Of course not. We do not intend to turn away from the axioms and catchwords advanced in previous years. We have more grounds than ever for continuing to affirm that we really are objectively measuring the energetic activity of fields, meridians and energy canals. At the same time we are also measuring the activity of the autonomous nervous system. How do these two things fit together?

For thousands of years, health and longevity have been the subject of extensive research in all of the world's civilizations. Doctors, practitioners and astrologers tried to penetrate the mysteries of life and death. There followed concepts trying to explain illness and ageing, temperament and character. The majority of these have been lost in the sands of time, and only faint echoes have reached us through scraps of manuscripts. But the manuscripts which did reach us are based on principles which differ from the Western materialistic outlook. These are the principles of the Earth, the energy of trees, grass and people. During the expedition to the land of the Sierra Nevada Indians in Columbia, we spoke to them in the language of energy, and they accepted us, opened their soul and sanctuary to us. So when we speak about energy fields, about meridians and charkas, we are using a language created by other civilizations – a language which, on an intuitive level, hands down ideas which have been proved by the practice of thousands of years.

The EPC method bridges the gap between logical Western science and the intuitive science of the Orient. It makes it possible to present the same phenomenon in different languages, in different systems, and to look at the same phenomenon from different points of view.

If you are familiar with the principles of Traditional Chinese Medicine, if you accept the ideas of meridians and energy channels and energy fields, then the EPC method is for you – particularly since the concept of electropuncture is already well integrated into modern Western medicine. If you feel close to the ideas of Ayurvedic medicine, you can successfully use the *EPC Chakra* program which carries additional information in comparison to the other programs. And in any language it is possible to speak of energy measurements and of the energy potential of

organs and systems. The concepts set out above provide these ideas with modern Western analogies and connect them to the current scientific paradigm.

As an example fig.4 demonstrates the graph of Chakras energies for a person before and after the energy massage with specially selected essential oils.

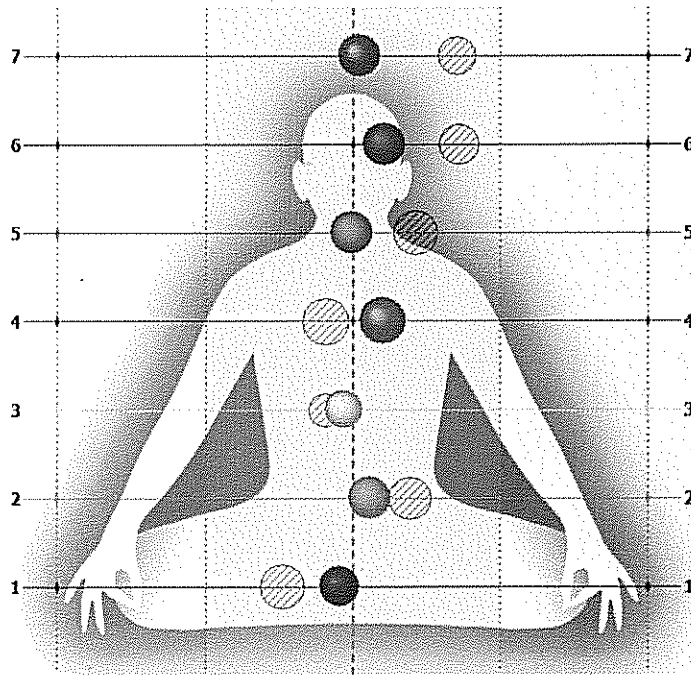


Fig. 4. The graph of Chakras energies measured by the EPC instrument for a person before (strip circles) and after the energy massage (solid circles) with specially selected essential oils.

We hope that the data obtained through the EPC method broadens that paradigm, giving it new content and a new language.

Measuring geo-active zones with the “5th element” sensor

The 5th Element principle is one of the bases of traditional Chinese medicine, as well as the Ying-Yang principle. The 5th Element theory arose out of observations of different groups of dynamic interactions in nature. Each element presents itself as a linking basis in nature and the human body. For example Fire corresponds to the Heart and Head. The interdependence of the five elements serves as a model of how various processes in the body correlate with each other. This interaction is mainly defined via the Sheng and Ke cycles (fig.5). The principle of the five elements was at the heart of the construction of the device.

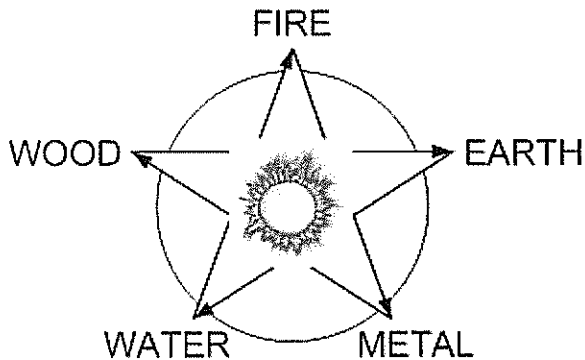


Fig.5. 5 Elements principle.

The working principles are cited in Fig.6. The EPC device serves as a measuring device. The titanium calibrated cylinder (incoming into the EPC set) is set on an optical lens in a special holder. The special computer operated switch brings together the terminal lead of the cylinder with each sensor in turn. In the first case the cylinder is joined to the general point of the EPC - Camera (contact 3 Fig.6). The remaining electrodes are: a metallic rod placed in water (river, stream, lake and so on); an earthed connection; an electrode driven into wood and a radio antenna. Each location records a dynamic set of images and calculates the timelines of the parameters using the SciLab programme. In each series of measurements, around 300 points are measured during the recording.

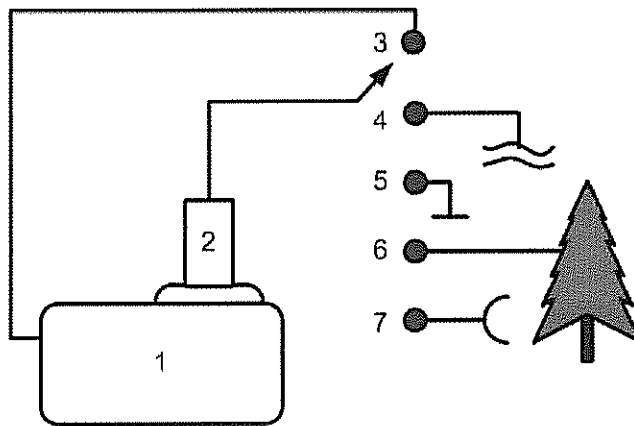


Fig.6. The working principle of the 5-th Element Sensor.

Parameters of the device depend on the environmental conditions, owing to the lack of external earthed circuit. It could be said that the sensitive element is the whole current circuit of the device. Therefore the 5-th Element sensor is an indicator of the parameters of the environmental conditions.

In case of stable environmental conditions the time dynamics of parameters was quite stable, while in areas of active energies high variations of parameters were detected. A lot of interesting data were obtained in geo-active zones in Russia, Venezuela, Colombia, England, Peru, Bahamas islands. Fig.7 demonstrate the variation of water sensor parameters measured at the Sivananda ashram yoga retreat, Paradise island, Bahamas. April 2007. 5th Element Water Sensor was positioned in a jar with natural water and readings were taken continuously by EPC instrument every 10 seconds in automatic mode. Neither sensor nor water were moved or touched during measurements.

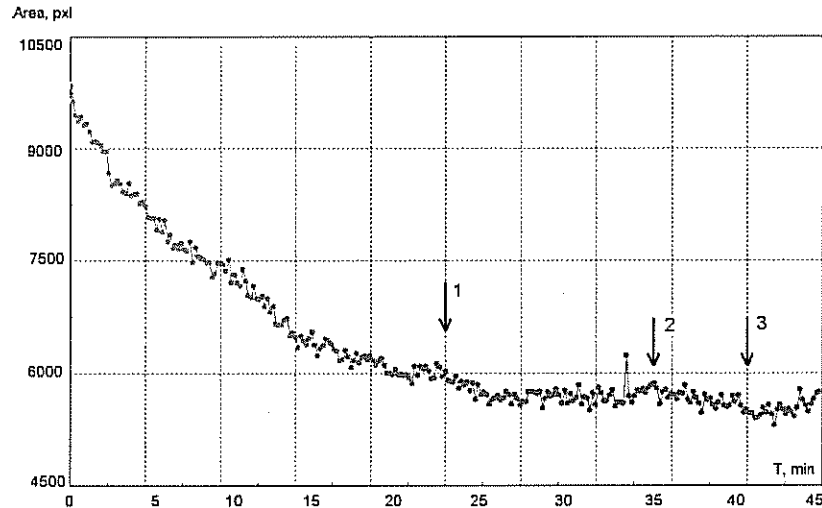


Fig.7. Time dynamics of the EPC Area of water sensor in the Temple 04-06.
1 – end of meditation; 2 – end of chanting; 3 – beginning of intentional meditation.

Statistical analysis demonstrated that data during meditation and chanting were dissimilar, which means that the chanting significantly changed the signal from the water. Comparison was made for the parts of the graph fig.7 which had no trends. To verify that results were due to the influence of a Temple conditions control measurements for several days in the room away from the Temple and without any human presence were conducted. No variations of the signal were detected. So we may conclude that water sensor reacted to the influence of the Yoga Temple.

Conclusion

The GDV-technique is intensively developing. There are hundreds of users world-wide. The GDV-Camera device is certified in Russia as a medicine tool and can be used in hospitals and medicine centers without limitations. The certification is taking place in Europe as well. The technique is constantly improving, new programs are being created. At the same time as a matter of fact all the methods have their strong and weak sides, therefore many questions demand for more investigations. However, it is evident, that the production of this simple in use and easy in application and interpretation technique allows to extend the frames of our understanding and fasten the application concepts and methods of Energy-informational paradigm in everyday practical work.

References

1. Korotkov K. Human Energy Field: Study with EPC Bioelectrography. Fair Lawn, NJ: Backbone Publishing Co. 2002
2. Korotkov K. Aura and Consciousness: New Stage of Scientific Understanding. St. Petersburg, Russia: State Editing and Publishing Unit "Kultura". 1998.
3. Korotkov K., Williams B., Wisneski L. Biophysical Energy Transfer Mechanisms in Living Systems: The Basis of Life Processes. J of Alternative and Complementary Medicine, 2004 10, 1, 49-57.
4. Szent-Györgyi A. Bioelectronics. New York: Academic Press. 1968.

5. Mandel P. 1986. Energy Emission Analysis; New Application of Kirlian Photography for Holistic Medicine. Synthesis Publishing Co., Germany.
6. Measuring Energy Fields: State of the Art. EPC Bioelectrography series. Vol. I. Korotkov K. (Ed.). Backbone Publishing Co. Fair Lawn, USA, 2004. 270 p.
7. Francomano CA, Jonas WB, Chez RA (eds): Proceedings: Measuring the Human Energy Field. State of the Science. Corona del Mar, CA, Samueli Institute, 2002
8. Korotkov K., Korotkin D. Concentration dependence of gas discharge around drops of inorganic electrolytes. J of Applied Physics, 2001, 89, 9, 4732-4737.
9. Korotkov K., Krizhanovsky E., Borisova M., Hayes M., Matravets P., Momoh K.S., Peterson P., Shiozawa K., and Vainshelboim A. The Research of the Time Dynamics of the Gas Discharge Around Drops of Liquids. J of Applied Physics. 2004, v. 95, N 7, pp. 3334-3338.
10. Vainshelboim A.L., Hayes M.T., Korotkov K., Momoh K.S. *Observing the Behavioral Response of Human Hair to a Specific External Stimulus Using Dynamic Gas Discharge Visualization* Journal of Cosmetic Science. Proceedings of the First International Conference on Applied Hair Science. Full Manuscript. Princeton, New Jersey. June 9-10, 2004. pp. S91-S104.
11. Bell I., Lewis D.A., Brooks A.J., Lewis S.E., Schwartz G.E. Gas Discharge Visualisation Evaluation of Ultramolecular Doses of Homeopathic Medicines Under Blinded, Controlled Conditions. J of Alternative and Complementary Medicine, 2003, 9, 1: 25-37
12. Vainshelboim A.L., Hayes M.T., Momoh K.S. *Bioelectrographic Testing of Mineral Samples: A Comparison of Techniques*. Journal of Alternative and Complementary Medicine. 2005: Vol. 11, No. 2, pp. 299-304.
13. Hacker G.W., Pawlaka E., Pauser G., Tichy G., Jell H., Posch G., Kraibacher G., Aigner A., Hutter J. Biomedical Evidence of Influence of Geopathic Zones on the Human Body: Scientifically Traceable Effects and Ways of Harmonization. Forsch Komplementärmed Klass Naturheilkd 2005;12.
14. Cioca GH, Giacomoni P, Rein G. A correlation between EPC and heart rate variability measures: a new measure of well being. In Measuring Energy Fields: State of the Art. EPC Bioelectrography series. Vol. I. Korotkov K. (Ed.). Backbone Publishing Co. Fair Lawn, USA, 2004. pp. 59-64.
15. Alexandrova R, Fedoseev G, Korotkov K, Philippova N, Zayzev S, Magidov M, Petrovsky I. Analysis of the bioelectrograms of bronchial asthma patients. Proceedings of the St. Petersburg State Medical University. 2001, 8, 1: 73-78.
16. Rizzo-Roberts N, Shealy N, Tiller W. Are There Electrical Devices that can Measure the body's Energy State Change to an Acupuncture Treatment? In: Measuring Energy Fields: State of the Art. EPC Bioelectrography series. Vol I. Korotkov K. (Ed.). Backbone Publishing Co. Fair Lawn, USA, 2004 pp. 31-38
17. Bundzen P., Korotkov K., Unestahl L.-E. Altered States of Consciousness: Review of Experimental Data Obtained with a Multiple Techniques Approach. J of Alternative and Complementary Medicine, 2002, 8 (2), 153-167.
18. Radin D. The Conscious Universe. HarperEdge. 1997.
19. Wisneski L., Anderson L. The Scientific Basis of Integrative Medicine. CRC Press. 2005.