



Aires Technologies



AIRES

NEUTRALIZER

OF ELECTROMAGNETIC ANOMALIES



CONCLUSION

to the theoretical analysis results of «AIRES neutralizer of electromagnetic anomalies» topological structure

1. AIRES neutralizer of electromagnetic anomalies (NEMA) is a compound specially configured diffraction grid according to its topological structure and physical effect it initiates. The neutralizer's central (base) element is made on a silicon chip and presents a spatial structure of thin metal conductors with a line width of 1 μm and interline distance of 5 μm . According to the calculations this structure is most effective with electromagnetic radiation with a wave length of about 10 μm . According to Plank radiation law this wave length corresponds to thermal radiation of a human body in its normal condition. The grid transforms this radiation emitted uniformly in space into a wave structure, representing a series of alternate maximums with an intensity several orders higher than the initial one.
2. The neutralizer's peripheral part is a flat metal grate formed of multiple intersecting O-elements. The grate's step changes from fractions of a millimeter to units of a millimeter (approx. up to 2 mm). This part of the neutralizer is most effective to interact with electromagnetic radiation of millimeter band, which, as it is stated in many scientific publications and works of the academician Gulyaev school, is endemic to a human organism. This radiation is also transformed by the diffraction grid into a structure, which represents a series of alternate maximums with an intensity several orders higher than the initial one.

Conclusions. AIRES neutralizer of electromagnetic anomalies is a device, which transforms the background electromagnetic radiation into a field structure corresponding to the basic parameters of a healthy human organism. In case of a rise of resonance phenomena, the radiation transformed by the neutralizer will influence any organism accordingly adapting its parameters to the basic ones of a healthy organism.

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Introduction

As early as in the 30s of the 20th c. the famous Russian scientist V.L. Chizhevsky established that sun radiation affects biological objects on the earth, including human beings. While the technological progress rapid development, especially in the field of electronics and informatics, even greater disturbs unstable enough human environment. It should be mentioned that a detrimental effect on a human organism of invisible but very dangerous electromagnetic contamination of the environment is much faster than the progress in electronics.

The active studies of electromagnetic fields effect on a human organism have started in the 60s of the 20th century. Enormous clinical materials related to unfavorable influence of magnetic and electromagnetic fields were accumulated and caused the introduction of a new nosological disease "Radiowave disease" or "Chronic microwave affection". The scientists of Russia and of other countries established that, first, a human nervous system was especially sensitive to EMF, and, second, that EMF with an intensity lower than a certain threshold value had the so called information action. A relatively low EMF (for instance, for RF > 300 MHz it makes less than 1 MW/cm²) level speaks about the information character of the influence.

Weak EMF

For low-frequency band EMF extra-weak is considered to be a background level, arising at the operation of industrial and even household appliances. Up to the present a clear idea on physico-chemical mechanisms of the biological effect of extra-weak natural and artificial agents has not been formed. To our sorrow, even now we can meet an opinion in the literature that weak low-frequency EMF of non-thermal intensity are safe for human beings, as these fields biological effect is impossible from the point of view of modern physics of the 20th century. At the same time a huge amount of actual and experimental data has been accumulated, showing these dangerous fields and radiations, as well as a hidden character of their effect.

This relates to the fact that the consequences of weak EMF effects may show themselves in months or even years, influencing the condition both live and abiotic matters. One of the events, supporting the importance of this problem, was the V-th International Conference of Electromagnetic Fields Effects on Plasticity and Strength of Materials held in February 2003. Many reports showed that the interaction of weak and extra-weak EMF with various materials results in the formation of a "chain reaction", which will last after the field effect is over. For instance, the consequence of this influence may show itself in 100 or more hours, causing considerable changes in the properties of materials and even their destruction.

Ecological importance of EMF is becoming an object of special studies. Discovery by Saratov scientists of SPE-effect allows to understand the reason and mechanism of biological organisms sensitivity to weak EMF (about units of microwatts). SPE-effect, which can be observed only at irradiation with low-intensity electromagnetic waves in a millimeter band (10...20 mcW/cm²) is connected with availability of 50...100 Hz resonance frequencies with water clusters. Waves of these frequencies propagate in water media (in particular, in a biological organism) with very small losses, involving deep structures into the process of interaction with a weak external signal.

EMF effect on human beings

Currently there exist two major international programs devoted to the problem of EMF influence on human beings:

- World Health Organization program "Electromagnetic Field and a Man" (since 1996 with 32 participating countries);
- International Project "Program of EEC Scientific Co-operation" (since 1993 with 17 European participating countries).

The national committees for the population protection from non-ionizing radiations have been created in many developed countries, like the USA, Great Britain, Germany, Italy, Sweden, and others. Besides, in some countries there are long-term programs in the provision of EMF safety for ecosystems and human beings.

Neutralization of the effects weak EMF have on a man is a part of the common problem of protecting biological objects from the influence of weak and extra-weak physico-chemical factors. The action of the said factors is below the activation threshold of protective biological mechanisms and so is able to accumulate at a sub-cell level, i.e. the level of genetic processes.

The variants of EMF influence on the biological objects, including human beings, are diverse: continuous and interrupted, common and local, combined from several sources and integrated with other unfavorable factors of a medium, etc.

The earliest clinical manifestations of EMF effects on a man are functional nervous system disorders. At a neurocyte's level these are structural formations transferring nerve impulses (synapses), at isolated nerve structures level these are considerable deviations caused by the effect of low-intensive EMF. With people in contact with EMF their higher neural activity and memory change. These people tend to develop stress reactions. Certain cerebral structures are highly sensitive to EMF. It was acknowledged that one of the systems, which at an early stage and naturally is involved in an organism's response to the influence of different external factors, is hypothalamus-hypophysis-adrenal gland cortex system. It was proved that multiple EMF radiation brings to a decreased hypophysis activity.

The cardio-vascular system disorders show themselves in pulse and blood pressure instability, inclination to hypotension, cardiac pains etc. EMF long-term action causes internal tension and bustling to arise in a man. Attention and memory are disturbed. People complain about low sleeping efficiency and fatigability.

Enough data is accumulated, which show EMF negative influence on the immune reactivity of an organism. The research outcomes make it possible to believe that at EMF action the processes of immunogenesis are disturbed and more often they are oppressed.

EMF biological effect is accumulated under conditions of a many year influence. As a result the development of distant consequences becomes possible, including degenerative processes of the central nervous system, hormonal, and oncological diseases.

There are important enough indications for available resonance effects at EMF influence exerted on biological objects, and also for available "frequency and amplitude windows" of high biological activity at the cell level, especially with EMF influencing the central nervous and immune systems.

All electric current operated household appliances are the sources of electromagnetic fields. The most powerful are microwave ovens, aerogrills, no-frost refrigerators, kitchen exhaust systems, electric stoves, and TV sets. The influence of low intensive EMF on human beings, for instance, EMF of a mobile phone, is no less important.

Mobile phone EMF effect

Today cell radio telephony is one of the most intensively developed telecommunication systems. More than 1 billion telephone subscribers currently exist in the world, using this type of mobile services (in Russia there are 24 million subscribers as of September 02, 2003, and they expect this to be 27 million by the end of 2003). Every year the number of active subscribers goes on.

A cell phone is a pocket-sized radio transmitter. Depending on the phone, standard transmission lies within 453-1785 MHz band. Maximum power lies within 0.125-1 W, however in reality it usually does not exceed 0.05-0.2 W.

According to the Newsweek magazine, first they blamed cell phone manufacturers in 1993 for their products being a possible reason for cancerous growths to appear. A man, whose wife died of brain cancer, stated that her disease was caused by frequent talks over a cell phone. However his claim to the manufacturer was rejected. That time they thought that no connection between cell phones and oncological diseases existed. But due to this story the world community for the first time started thinking about a considerable harm that each cell phone call may cause to human health.

With an operating cell phone electromagnetic radiation is taken up both by a base station receiver and a user's body, especially by the user's head. When talking over a cell phone the measurements of the brain bioelectric activity are so pronounced that could be described as a local electromagnetic storm.

Available statistical data shows that:

- a period of time required for an organism to restore the resources spent for talking on a cell phone ten times exceeds the talk itself;
- talking on a cell phone for more than 2 or 3 hours a week is accompanied with the organism functional changes.

Due to the related publications in the press the manufacturers today can not

ignore this issue as they did before. For example, in July 2001, soon after the World Health Organization demanded carrying out serious studies of harm caused by mobile phones, the US Association of Cell Phone Manufacturers independently declared that from that point the cell phone manufacturers in the product associated documents would give information on a phone radiated EMF level, which would allow the buyers to choose a phone with the lowest radiation level.

EMF Evaluation (SAR)

In June 2000, the Cell Telephone Industry Association (CTIA) offered to the cell phone manufacturers to obligatory show in the cell phone specifications a phone's specific absorption rate (SAR). This parameter characterizes specific power of absorption of electromagnetic radiation by a human organism, which warms up biological tissues (measurement units W/kg). To give it more simple, the higher is SAR, the higher is a doze of electromagnetic radiation. SAR value is based on the thermal measurement method and calculated using a computer model. Measurements of thermal parameters are made on special dummies. SAR values can be defined at a constant oscillation frequency and signal pulsation, i.e. at a switched off cell phone. Until now the scientists have failed to find other measuring parameters for cell phone radiations harmful for a man's health. Definition of a cell phone SAR value requires a series of additional measurements. In Europe SAR value averaging per 10 g of live tissue is allowed, in the USA this figure makes just 1 g, which in practice may result in inaccurate definition of a cell phone radiation. Besides, it should be taken into account that even small changes in ear or eye tissue thermal regulation can bring to irreversible consequences. With an unavailable more exact system of a cell phone radiation registration it is more expedient to use SAR criteria introduced in the USA.

There are official international parameters of radiation intensity influence over a human being:

- a very small is considered a SAR value not exceeding 0.25 W/kg;
- small radiation effect includes SAR values lying within the range 0.25-0.5 W/kg;
- medium SAR value makes from 0.51 to 1.00 W/kg;
- strong cell phone radiation is shown by a SAR from 1.01 to 2.00 W/kg.

A maximum permissible SAR value for a cell phone is 1.6 W/kg. Phones are considered harmful for health with a higher than the above value. They are not recommended for manufacture, though the law does not forbid it. So, when buying a cell phone one should rely on him/herself only. Despite everything, it seems that there is nothing to stop the population "mobilization". A cell phone became an integral part of modern life, and many people have got so used to the feeling of comfort it brings that cannot imagine their life without it.

The above given official figures differ drastically from the real facts. German scientists proved that SAR exceeding 0.002 W/kg is destructive for DNA structures and can be the reason of oncological diseases, it also destructs cerebral cells etc. A group of scientists from Madrid University managed to prove and visually demonstrate inaccuracy of the previous tests due to a considerable difference of a live cell form its computer model. Computer simulated cells looked

like balls, though real human cells look more like cylinders. In connection with a more complicated structure, human cells were found to be more sensitive to the effect of harmful for all living things radiations.

Computer EMF effects

Personal computer is no less dangerous for human health.

Tests carried out in 1996 in the Center of Electromagnetic Safety of Russia demonstrated that even with a short-term operation (45 minutes) a user's organism under the influence of electromagnetic radiation produced by monitor suffers considerable hormonal changes and specific changes of the brain biocurrents.

15 kV/m electrostatic field of a video terminal (VT) with the teenagers playing on the computer for an hour increases the excitation processes of the CNS and shifts vegetative homeostasis to sympathetic predominance.

The examination of 1583 women carried out in Oakland, California, USA, by the Kaiser Medical Center demonstrated that with women, using computer terminals for more than 20 hours a week, risk of miscarriage at early and late pregnancy stages is 80% higher than with women, doing the same job without using the displays. According to Swedish scientists, there is a 90% possibility that with VT users spontaneous abortions happen 1,5 times more often or children, having congenital defects, are delivered 2.5 times more often in comparison with women of other professions.

According to generalized data, with those people who work on the computer from 2 to 6 hours a day functional disorders of the CNS occur 4.6 times more often than with those from the control groups, cardio-vascular system diseases are doubled, upper airways diseases happen 1.9 times more often, locomotor system diseases take place 3.1 times more often. Computer user's health gets worse with the increase of computer operation time. Daily and constant use of a computer monitor may bring to pathological eye disorders, disorders of the CNS, cardio-vascular and immune systems within 6-8 years.

Protective Devices

For many years attempts to create screens and devices weakening the negative effects of technogenic electromagnetic fields have been made.

In December 2000, in Britain a "WaveZorb" replaceable extension for a cell phone antenna made of carbon material appeared.

"VISION International People Group" Company (Russia) to protect from electromagnetic fields of household appliances, including cell phones, suggested "Antiradiant" stickers.

At the end of February 2001, American Company "Dominex" produced an EMT-chip based "Dr. Net" instrument.

In March 2001, it was announced that a research group from Hong Kong University of Science and Technology developed a protective film, decreasing a

cell phone microwave radiation by 90% with no influence on the communication quality. Though Motorola specialists called the announcement in question.

Despite multiple protective devices available in the market, they do not give a guaranteed effect. One may say that until recently there has been no real user's protection from electromagnetic radiations of household appliances, computers, and radiotelephones, not to say about more intensive effects of technogenic character.

Research of FMS Influence

In 1991, when researching how fractal-matrix structures influence on a human organism, the effect of an organism's functional state normalization was revealed. Further researches resulted in the creation of a series of graphic structures of flat application elements, which were called matrix applicators and in 2001 recognized as an official medical product by the RF Ministry of Public Health (TU 9444-001-4897 1233-2001).

The analysis of the results of physical, physico-chemical and medico-biological researches, aimed at the study of the discovered effect's physical nature and observed phenomena, allowed to reveal a number of particular features inherent in all the processes in question, which resulted in the development of a universal method of influence on the biological objects. The above made it possible to create a number of unique products for effective correction of both pathologic states of a man and environmental electromagnetic anomalies. Following numerous researches, AIRES New Medical Technologies Development Foundation was established in June 1998 and in April 2000 – MATRIX Scientific and Production Association, which deals with the development and manufacture of devices and systems, employing a universal resonance method of influence.

The latest AIRES Foundation's development – AIRES NEUTRALIZER OF ELECTROMAGNETIC ANOMALIES (NEMA).

The AIRES NEMA's base structure is a crystalline silicon based passive fractal-matrix resonator, which fractal topology has a line width of 1 micron. It is fixed in the middle of a round trap-antenna (metallized topology), which is applied on the surface of self-adhesive film or paper. Transparent compound covers the chip and the trap-antenna from the top, which provides their firm fixation and protection from any external influence.

Theoretical and experimental researches, conducted in the S.I. Vavilov State Optics Institute Fractal Optics laboratory under the guidance of G.S. Melnikov, have shown that in terms of optics, the worked out graphical modules of fractal-matrix structurizers (FMS) correspond to complex, non-linear, diffraction grids.

It has been stated that FMS are:

- phase Fourier filters (analyzers) of spatial frequencies, which evolve a discrete frequency grid in the transmitted or reflected radiation;
- generators of an ordered extraneous pattern, which is overlapped with a field structure of auto interference of spatial frequencies, which are connected with the centers of topology fractalization;
- graphically synthesized holograms, which form a stable spatial pattern of

the generated field periodic maximum and minimum with a harmonic correlations of frequencies and amplitudes.

Thus, each FMS as a universal spatial-wave Fourier filter disintegrates any electromagnetic field oscillations (background, technogenic, biological ones) into harmonic components (Fig. 1). An electromagnetic impulse, passing through a matrix filter, activates the fractal field due to the interference of flows, which have passed through the FMS diffraction grid or have been reflected by it. Consequently, a more harmonic and ordered background area is generated in the impact zone. Thus, due to the passive interaction between the technogenic electromagnetic background and the FMS matrix pattern, first of all, the most aggres-

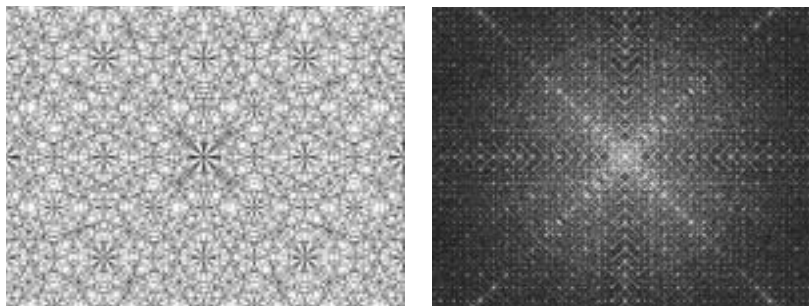


Fig. 1. FMS variant and a result of spatial-wave structure formation, formed with an electromagnetic energy beam passed through it.

sive peak field anomalies are corrected, and besides structural parameters of physical fields in an ambient space are improved in a wide spectral range.

Since AIRES NEMA is a combination of two FMS of different scales, which consist of the lines, regularly organized in space, one can use the well-known concepts of a diffraction grid to understand the mechanism of its work.

Absolute black body radiation law (Plank's law) gives the graphic chart of radiation power dependence on the wave length and temperature. Maximums of radiation power under the temperature rise shift towards shorter waves. This fact is described by the Wien displacement law, which can help to determine the wave length (λ_{\max}) bearing maximum power. For thermal radiation of a human body (at a temperature of 36,6°C) $\lambda_{\max}= 9,35$ mcm. Since a maximum distance between topological lines on NEMA crystal makes about 5 mcm, for a human thermal radiation this structure is a diffraction grid, which results in the interference and ordering of this radiation.

The distance between topological lines on NEMA antenna is about 2 mm, consequently, it is a diffraction grid for an electromagnetic impulse millimeter band, which, as it is stated in the works of the academician Gulyaev school's scholars, also corresponds to a human body radiation.

Under the guidance of the doctor of technical science, professor V.I.Margolin, the FMS influence on physical processes was researched in St.-Petersburg State Electro Engineering University (LETI) at the faculties of electron-ion and vacuum technology, microelectronics, micro radio electronics, and radio equipment technology by the example of thin-film coating formation process.

The researches of the received samples are conducted on the base of leading Russian scientific-research organizations: St.-Petersburg State University, ALL-Russian Institute of Geology (St.-Petersburg), St.-Petersburg State Institute of Precise Mechanics and Optics, St.-Petersburg State Technological Institute, Russian Academy of Science Crystallography Institute (Moscow).

The analysis of the received information has shown that the films deposited under the structurizers influence, possess a pronounced fractal character, which is displayed in the formation of structures with regularly distributed separate elements, having their own gradation level. In other words, film coatings with a rigidly organized and strictly hierarchical structure, having self-similarity and self-correction properties are formed (Fig. 2).

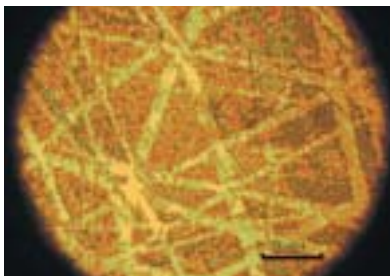


Fig. 2. Copper film, deposited in a work chamber with FMS available

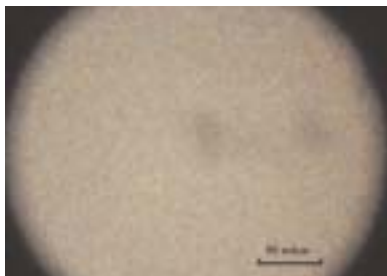


Fig. 3. Copper film, deposited under common conditions.

Fractal character of the films structure is detected on the deepest levels, which is clearly shown by the scanning probe microscopy (Fig. 4,5). Phase and chemical analysis of the received films has shown the conformity of the film and the deposited material.

Metal films, deposited under common conditions, that is without the structurizer's influence, represent a fine-grain structure uniformly distributed on the substrate surface in full conformity with the traditional conceptions of the condensation theory (Fig. 3).

Thus, it is proved that FMS influences on the spatial composition (form) of physical objects, creating complex three-dimensional fractal structures without changing the substance's chemical nature.

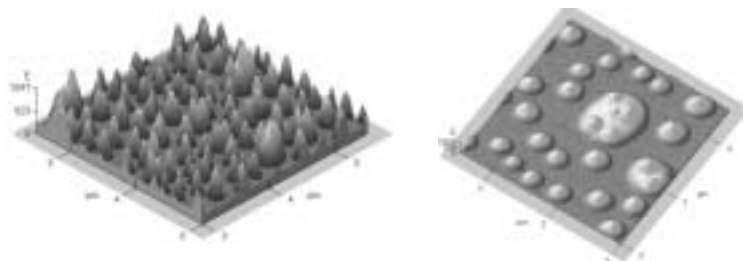


Fig. 4, 5. Pictures of copper film surface, deposited with FMS available, which were received by means of the scanning probe microscopy on different levels.

Under the guidance of the doctor of technical science, professor M.G. Tomilin, nematics were used for the visualization of the electromagnetic field spatial structuring, effected by means of FMS application. The received structures were observed in a common light and polarizing microscope, and registered by photographic and computer means.

In common cases, a thin nematic layer is made in the form of a continuous film, which visualizes surface structural inhomogeneities, microrelief defects and two-dimensional distribution of low physical fields of different nature (Fig. 6). Upon the nematic layer application on the surface of a high reproducibility structurizer, one could observe the drops distribution in the form of a regular structure, which was formed according to the fractal principle and in a certain way correlated with the structurizer's topology. The gradient of drops' sizes and the way of the surface filling have made it possible to reveal several fractalization levels (Fig. 7).

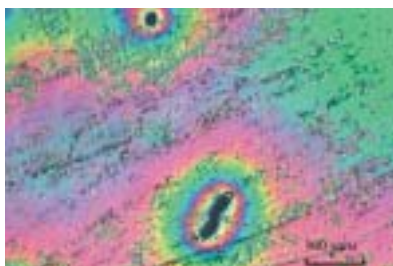


Fig. 6. Picture of NC layer surface (in polarized light) without FMS influence.

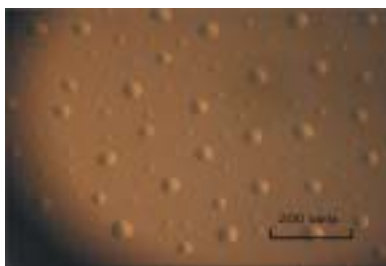


Fig. 7. Picture of NC layer surface (in non-polarized light) under FMS influence.

The experiments conducted in I.I. Mechnikov St.-Petersburg State Medical Academy under the guidance of the doctor of chemical science, professor V.I. Slesarev, have shown that FMS, while structuring the background electromagnetic field, change physical-chemical properties of the water.

The interest for ordinary water is conditioned by its biological importance and valuable structural-informational properties. It is known that more than 62% of a human organism consists of water, which is involved in all biochemical reactions. That is why the water quality is a governing factor for the synthesis of adequate bio molecular compounds necessary for human vital functions.

Water is an open, dynamic, structurally complex system, which steady state is easily upset upon any external influence, which results in a transient state of the system, characterized first of all by a change of the structural-informational character. As a result of self-organization, water can either return to the initial state or turn into a new steady state.

During researches the aqua-communication phenomenon for animate and inanimate water-containing systems was scientifically ascertained, which means that water perceives, keeps and transfers information as a result of its capability to structure. Water clusters – intermolecular water associate elements with a certain structural composition, determine the stability of any molecular compound formed on the basis of water. Natural fluctuation of molec-

ular dipoles in clusters leads to the appearance of background electromagnetic radiation, which is modulated by information encoded in the clusters structure and causes the reproduction of clusters, containing initial information.

The recovery of a living organism's structural integrity demands the correction of the structural-informational state of intracellular water, by eliminating the clusters with bio pathogenic properties. The application of a special technology of water treatment with FMS employment (being the base for NEMA creation) allows to eliminate the clusters' bio pathogenicity, changing their structural-informational state. That is why, when sticking FMS (including NEMA) on human bioactive points (BAP), bio pathogenic water clusters will be reconstructed into BAS. And the appearance of a resonance between the clusters, which are formed in the structured water and water medium of the whole organism will result in the normalization of regulatory systems functioning and the organism as a whole.

High biological and physiological activity of FMS and the aqua-communication phenomenon made possible the creation of two types of devices, protecting water from the bio pathogenic influence of physical fields and making for positive structurization of drinking water. At the same time, applying the device of the first type, one can increase water medium pH (Fig. 8, curve E-14), and applying the device of the second type, one can stabilize water pH value independently on the environmental conditions (Fig. 9, curves E-49, E-50), preserving the positive structurization.

Besides studying the FMS influence on water structural properties by means of pH-metering, in the problem laboratory of scientific grounding of traditional methods of diagnostics and treatment of the Scientific Clinical and Experimental Center of Traditional Methods of Diagnostics and Treatment under the guidance of the doctor of biological science S.V. Zenin, NEMA's protective properties against radiotelephone and computer monitor radiation have been researched. For that a recognized and patented method of metering such integral physical parameter as water conductivity, which informational system is chosen as an influence detector, was used.

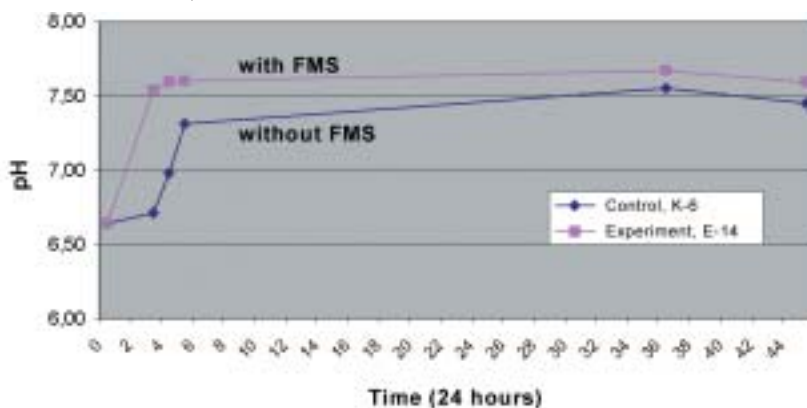


Fig. 8. Changes of water pH value with FMS (the growth of pH value corresponds to the reduction of water medium acidity).

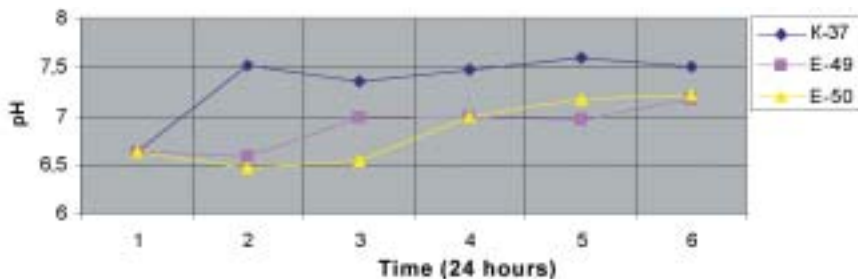


Fig. 9. Water pH stabilization with FMS. K-37 – sample without FMS, E-49, E-50 -sample with FMS.

The received metering results, first of all, testify the objectivization of NEMA's protective action. The kinetics of electric conductivity change after the operation of a radiotelephone and monitor with NEMA shows that the influence of the radiotelephone and monitor radiation on the structurized water state is practically completely compensated.

The water medium's pronounced reaction to fractal fields formed by FMS became a ground for a comprehensive study of the base NEMA's element (crystal-matrix applicator – CMA, one of FMS modifications) influence on a human organism, which was effected on the basis of Kirov Military Medical Academy with the participation of Russian Academy of Science I.P. Pavlov Physiology Institute specialists, St.-Petersburg city hospital № 20, OOO "STA MED" and "AIRES Foundation Medical Center".

During the work the study of a human organism's functional state change under CMA influence in a wakeful rest state and during the fulfillment of actions was conducted by means of physiologic, computer, electrophysiologic and psychophysiologic methods.

The revealed character of physiologic, psychophysiologic and psychologic levels of a human organism's functional state, as well as information regarding the dynamics of a probationer's functional state and efficiency upon the work with the tested articles during a working cycle, allow to conclude that the use of CMA in the state of psycho-emotional stress, which appears during the activity, increases the tonus of sympathetic nervous system, facilitates the mobilization of the organism's functional reserves and the support of the most important in the activity fulfillment psychophysiologic parameters at a necessary level. This, in its turn, results in the optimization of the present functional state regulation mechanisms upon the organism's systemic reaction realization and can increase the effectiveness of the activity.

Further researches of NEMA's influence were aimed at revealing its protective properties against the detrimental effect of a mobile telephone's electromagnetic field. At first, in the St.-Petersburg State Polytechnic University, Laboratory of Electromagnetism of Water Ecosystems, a series of electric field intensity measurements was conducted along a standard cell phone with a glued on NEMA. The measurements were made with the use of NEVA-N electric field meter (range of measurements: 0-0,25; 0-1 [kV/m]).

The received information (Fig. 10) shows that the intensity of an electric field and consequently, negative influence of a radio telephone on a person in

NEMA's presence is three times less. It should be noted that "the coverage area" and signal receipt stability remain unchanged.

Additional tests conducted in March-April 2003 with different types of GSM 900/1800 MHz cell phones allowed to give a more detailed character of electromagnetic field change in NEMA's presence.

When using a phone without NEMA the most important thing is the type of a telephone set. (TS) For instance, TS of different models have similar characteristics in a standby mode, but they are considerably different in a ring mode.

When using a phone with NEMA, the identity of spectra is observed, both in a standby mode and in a conversation mode. NEMA provides a more smooth energy $S(f)$ drop with the first deep minimum in the area of 35 Hz, and also considerably decreases the radiation energy in the area of 50 Hz (Fig. 11-14).

A phenomenon of natural field modulation by the cell TS's electromagnetic radiation and the applied NEMA was also revealed in a low frequency zone. Since oscillations of a geomagnetic field's very-low-frequency components in the range of about 0,01-10 Hz are highly bioactive (thus, magnetic disturbances cause the central nervous system's crises, hypertension crises, etc.), upon the resonance effect appearance (as a result of an additional effect of the electromagnetic radiation source), pathologic effects in the central nervous system can intensify. That is the reason why the registered variances of the natural field indirectly reveal resonance frequency windows, which characterizes the electromagnetic field source as a biological (ecological) agent.

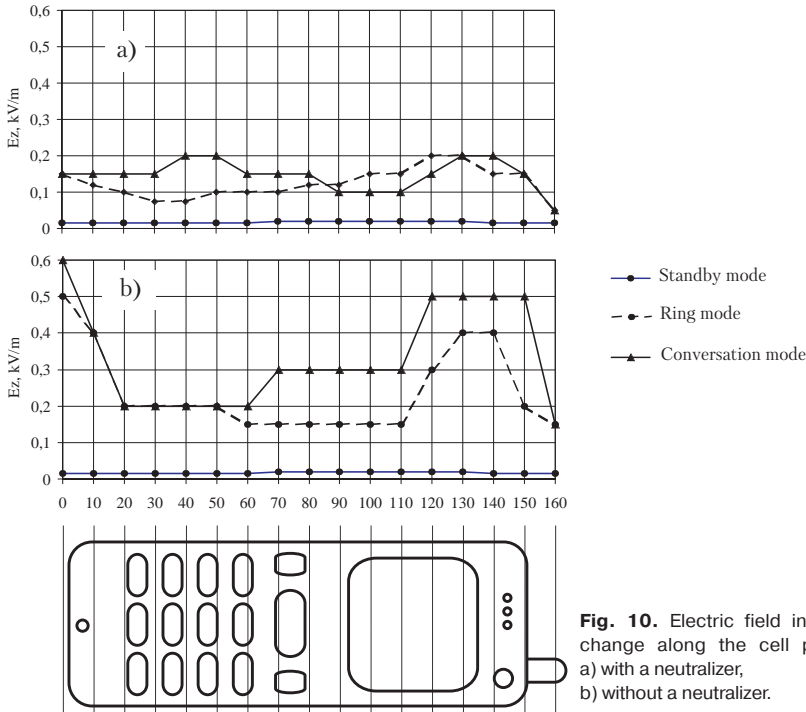
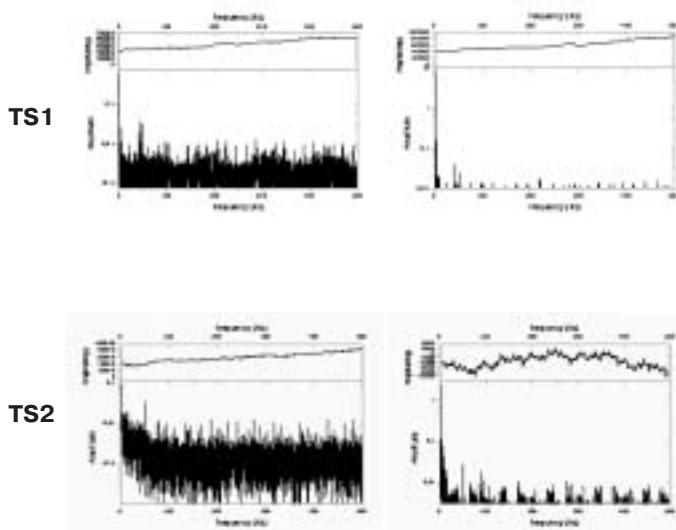


Fig. 10. Electric field intensity change along the cell phone, a) with a neutralizer, b) without a neutralizer.

TS in a standby mode (on the left) and in a ring mode (on the right) without a neutralizer



TS in a standby mode (on the left) and in a ring mode (on the right) with a neutralizer

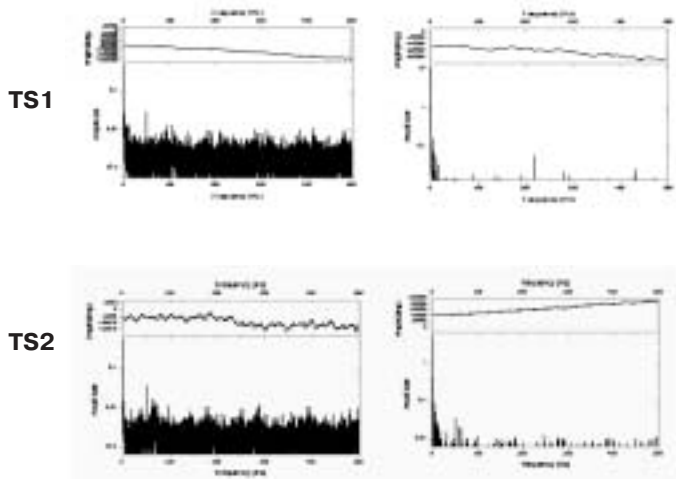


Fig. 11-14. Representative phase-frequency and gain-frequency spectra from the data bank of TS's main operating modes.

Biomedical researches

The solution of both theoretical issues, clarifying the mechanisms of EMF effect on the biological processes, and of practical ones, related to the creation of effective means of protection from the EMF negative effect on biological objects, are impossible without new approaches realization. In what follows are given the research results of using FMS as a neutralizer of a negative effect EMF has on the functional state of a human organism.

Bioelectric activity of the brain represents the total activity of neurocytes, pathways, surrounding cells and mostly of postsynaptic potentials. Synapse is a point of information transfer from one cell to another. Interacting with each other nervous elements at a single moment of time create their own mosaic of electric oscillations in separate points of the brain surface. The amplitude of these oscillations is very small, making several tens of microvolts. The fact that changes of the organism's internal and external media entail changes of microelectric oscillations of the brain has been proved since long. As early as in the works of V.V. Pravdich-Nemibsky (1925), the brain has been viewed not only as an oscillator of electric oscillations but as a device sensitively responding with its own activity shifts to the smallest changes of a background electromagnetic field.

The diagram shows the changing EEG spectrum of a tested person before and during talking over a cell phone (Fig. 15a, b, c).



Fig. 15 a). Spectral characteristic of the brain bioelectric activity before talking on a cell phone

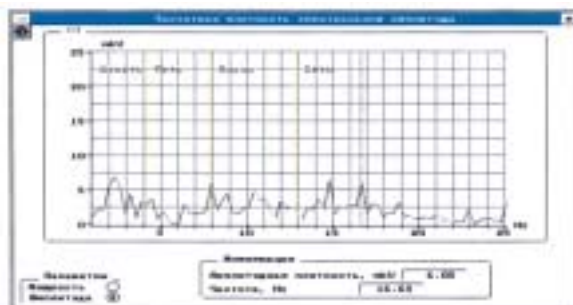


Fig. 15 b). Spectral characteristic of the brain bioelectric activity during talking on a cell phone



Fig. 15 c). Spectral characteristic of the brain bioelectric activity during talking on a cell phone with AIREs NEMA glued on

The conducted studies have clearly shown that due to NEMA-to-brain tissues resonance interaction leveled not only local BEA changes, resulted from the directive technogenic effect (radio telephone), but the CNS regulatory mechanisms are mobilized also. The process is accompanied with the normalization of a total BEA pattern distorted at a negative technogenic influence or disorganized due to a disease (Fig. 15 c).

The figures below show both the total rhythmotopogram and power distribution of rhythms by specific bands of another tested person. The essential point noticed with all the tested persons besides their initial EEG distorted rhythmic pattern, was a pronounced asymmetry of the rhythms distribution on the convex surface (Fig.17) caused by an operating cell phone with switched off audio signals. The asymmetry to delta-activity in the cell phone zone has shown a 37% increase in average. However with NEMA available, the asymmetry due to a cell phone operation, has been leveled (Fig.18).

A deeper analysis of EEG's center-to-center interactions links (Fig.19) has demonstrated that with an operating unprotected cell phone the structure of the center-to-center links was destructed, whereas with an available NEMA the distorted links restored and even improved their structure when compared to the initial background.

The local changes of bioelectric activity may result from a weak EMF, for instance, from a cell phone EMF, or appear due to the disturbed blood flow. Irrespective of the cause of BEA local disorders, they can be corrected with a field with a regular fractal structure, in our case, the one created by NEMA.

Operative control of the cardio-vascular and endocrine systems was carried out to Voll method through measuring electromagnetic oscillations at the most interested biologically active points with the following data analysis and processing with the help of a software complex developed by the IMEDIS Center employees and approved with the RF Health Ministry.

The studies of AIREs NEMA protective properties to P. Voll method have revealed that a five-minute talk over a cell phone reduces functional activity of the organs and tissues on average by 30% and even more, whereas NEMA not only protects a human organism from technogenic radiation consequences but promotes the disturbed functions recovery and stabilizes the received recovery effect for several hours.

Power distribution of EEG rhythms: total distribution is on the right, band distribution is on the left.

Fig. 16.

Brain background activity

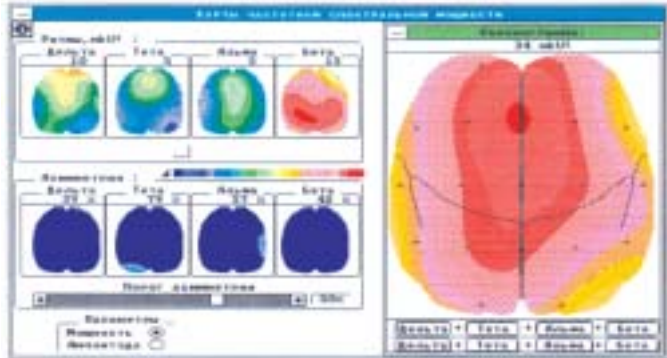


Fig. 17.

Neutralizer is unavailable



Arrows show the asymmetry of the rhythms power distribution when talking on a cell phone

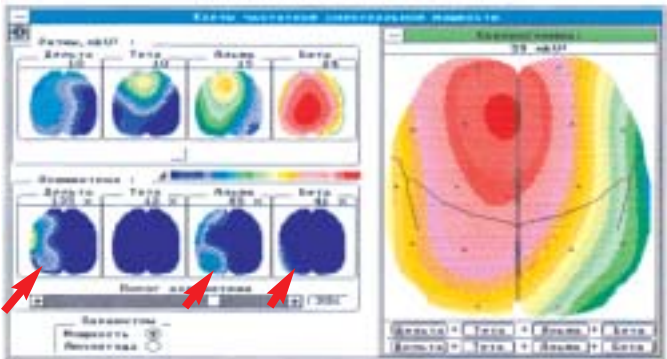
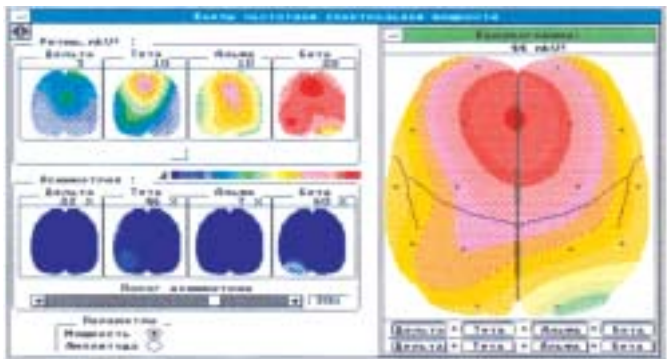


Fig. 18.

Available neutralizer



Neutralized asymmetry



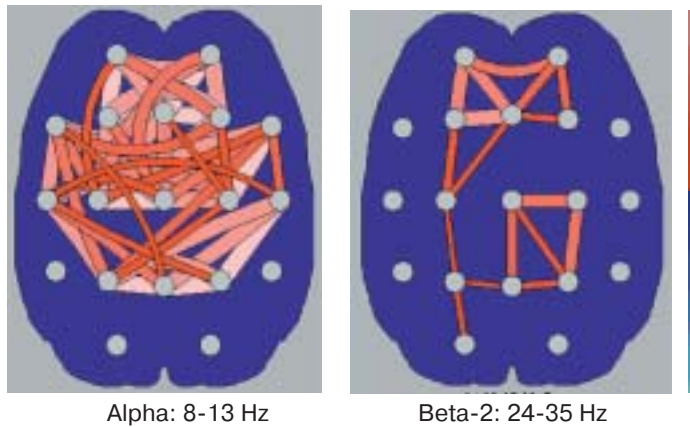


Fig. 19 a). The background pattern of center-to-center links in different EEG bands. The pattern of center-to-center links distribution in alpha (8-12 Hz, left) and beta-2 (24-35 Hz, rights) bands of the brain bioelectric activity before using a cell phone. Weakening of alpha-band links due to a disordered venous outflow with this tested person was noted, as well as beta-band links reduction due to the general circulatory collapse as of the moment of examination.

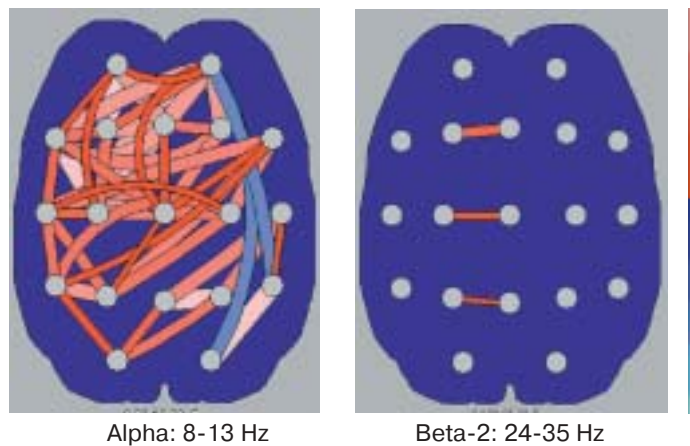


Fig. 19 b). The pattern of the brain BEA center-to-center links when talking on a cell phone and thereafter. Seen is an active process (negative links) of negative effect of the cell phone EMF mainly on the left semisphere closely connected with the emotigenic structures and completely destructed links in beta-band (center-to-center interaction at the brain cortex).

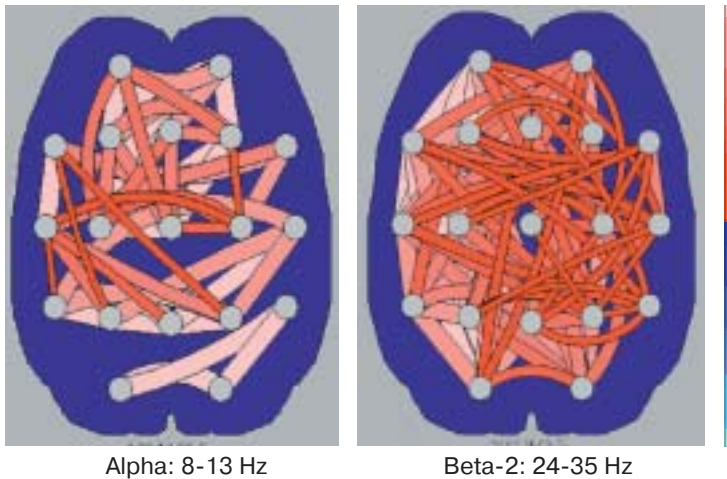


Fig. 19 c). The pattern of the brain BEA center-to-center links when talking on a cell phone with glued on NEMA and thereafter. Revealed was the improvement of center-to-center links even when compared to the initial level.

Fig. 20 shows that functional activity has worsened twice after talking on a cell phone, while the subsequent talk over the same cell phone with a glued on NEMA, which occurred in five minutes, not only removed all the negative effects of the previous talk but considerably increased the condition compared to the background measurement. According to the 4th measurement this effect is still stable in 30 minutes.

Normal zone is within 50 to 60 conditional units range.

As it is clear from Fig.21, functional activity of most organs and systems lies within the normal zone.

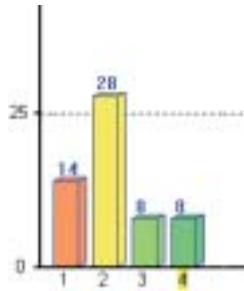
The right part of Fig. 21 holds the list of the measured points. The diagram shows electric parameters (EP given in conditional units) of control measurement points (CMP). Y-axis holds the testing level values.

The diagram on Fig. 22 shows a sharp drop of functional activity after a five-minute talk on a cell phone of such key systems as immune, endocrine, blood circulation, and gastrointestinal.

Fig. 22 a illustrates the changes of the blood circulation system CMP electric potential potential influenced by cell phone radiation (column 2) as compared to the initial background (column 1) and available protective NEMA (column 3).

It is essential to point out that the blood circulation system electric potential, being influenced by cell phone EMR, has sharply dropped to the level where progressive dystrophic system changes develop. There is also a need to show the pronounced effect (shown in red) of an arrow drop, witnessing evident asthenization and disorder of neurohumoral regulation and vegetative balance, which also shows the cell destruction processes. This is most baneful for an organism, as it says both about the system destruction and functional failures.

NEMA effect not only removes all the above named negative consequences of



1. Integral factor (IF) of abnormality of functional state parameters (0 point) before a telephone talk.
2. IF after a 5 minute talk on a cell phone.
3. IF after a 5 minute talk on a cell phone with NEMA
4. IF 30 minutes later.

Fig. 20. Dynamics of the total factor of abnormality of parameters of an organism state at various effects.

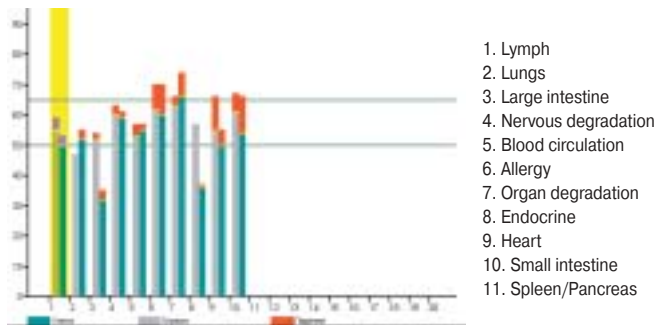


Fig. 21. Background parameter diagram of initial functional activity of the organs and systems before telephone talks.

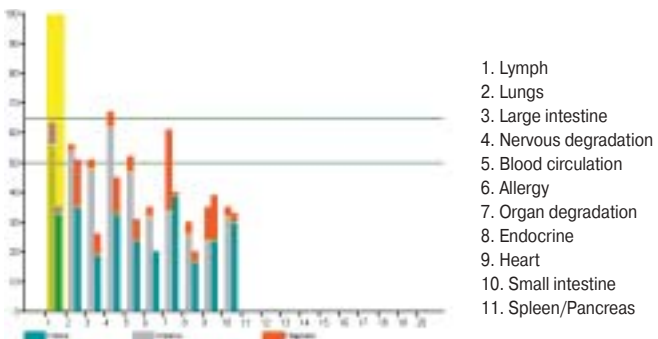


Fig.22. EP of CMP after a 5 minute talk onr an unprotected cell phone

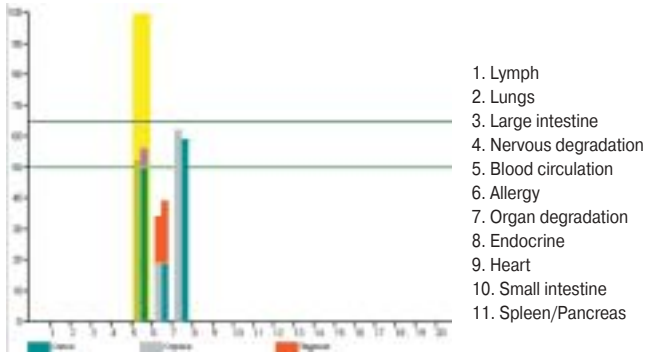


Fig. 22 a). The dynamics of the blood circulation system CMP electric potential influenced by technological EMR of a cell phone before switching it on, during talking, and with AIREs NEMA available.

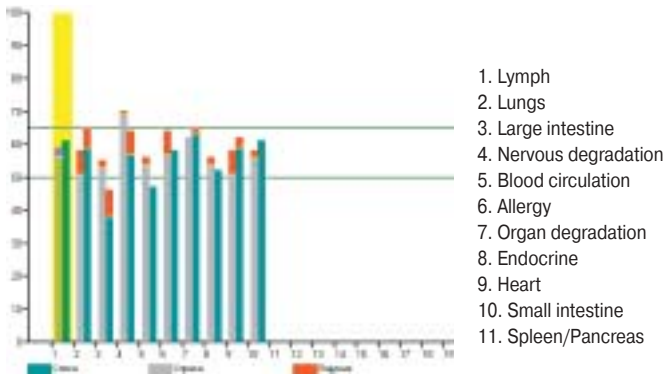


Fig. 23. EP of CMP after a 5 minute talk on a NEMA protected cell phone

EMR but improves the start parameters also.

Fig. 23 shows the changes of functional activity of the organs and systems after a five-minute talk on the same cell phone, though NEMA protected. The parameters have not only been restored but improved also even as compared to the initial background measurements, which, as a matter of fact, makes a medical effect.

Complete correspondence of the changed EEG indices to the ones received to Voll method is worth noting.

The figures below demonstrate the comparative analysis of the effects of various protective devices, designed to neutralize a harmful influence of EMF of the cell phones and produced in the USA, Serbia, the Ukraine, and Russia, and of NEMA on a man's condition when talking on the phone protected with the above devices (Fig. 25, 26).

As is evident from EEG data (Fig. 24 a, b) the pattern of infrastructural interaction has not been restored at using this device, which is most clearly displayed in alpha-band (Fig. 24 a).

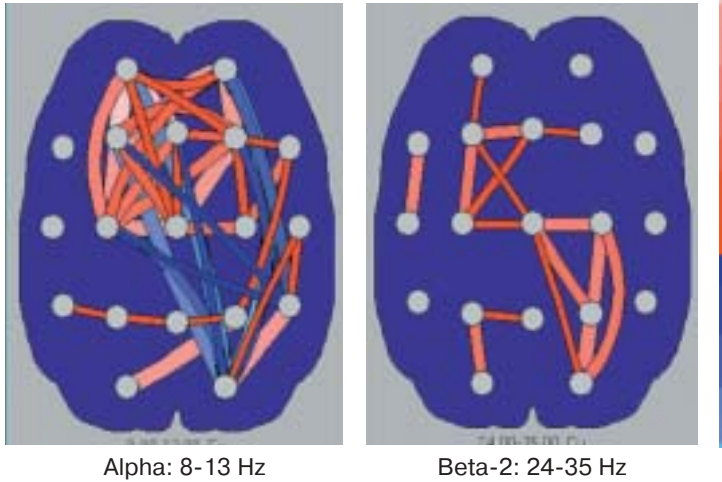


Fig. 24 a), b). The charts of center-to-center links when talking on a cell phone with one out of other protective devices available

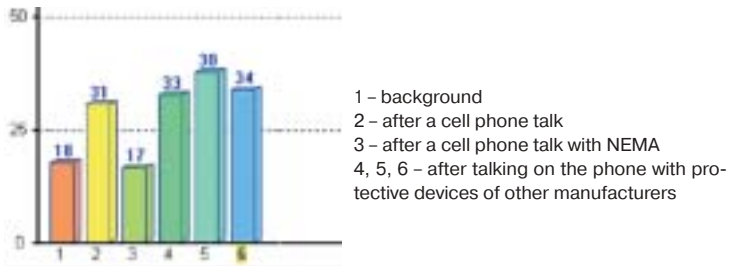


Fig. 25. The dynamics of the total factor of abnormality of CMP electric potential of the organs and systems of a practically healthy man, when using different protective devices

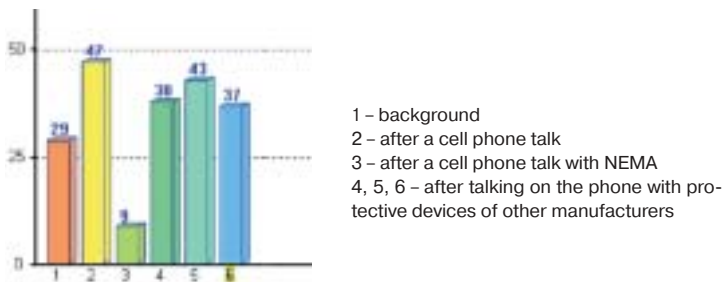


Fig. 26. The dynamics of the total factor of abnormality of CMP electric potential of the organs and systems of a conditionally healthy man, when using different protective devices.

The studies of other protective devices brought similar results.

Moreover, it was revealed that NEMA saves the resources of the organism own protective mechanisms, whereas other protective devices of other manufacturers studied in parallel cause an additional stress for the regulatory systems of the organism.

This is confirmed by examining an almost healthy man reaction carried out to R. Voll method (Fig. 25). To a greater extent the like effect of protective devices under studies (excluding NEMA) has been revealed with persons, having the initially stressed regulatory processes, for instance, at vegetovascular dystonia, vertebrobasilar insufficiency, and astenoneurotic syndrome (Fig. 26).

Summing up the obtained results, it may be deduced that NEMA levels the influence of directional electromagnetic radiation produced by a cell phone. It is not excluded that the correction of local changes of bioelectric activity can be explained with NEMA's ability to harmonize an electromagnetic field generated by an external source of electromagnetic oscillations. Besides, as noted above, the changes of EEG frequency-amplitude parameters have been traced. Statistical processing revealed the most evident changes ($p < 0,05$) in alpha-band. According to competent sources alpha-rhythm can be viewed as "a clock-work", regulating signal receipt and return by/from the cerebral cortex (M.A.Brazier). D.B. Lindley considers alpha-rhythm as "a coding system" required for the brain not to distort or erase the outer world perception and responses to the brain irritation caused by an inflow of sensor stimuli. Other authors also emphasize a special role of alpha-rhythms in the mechanisms of adjustment to outer factors, including natural and social ones. With NEMA available constructive reorganization of the total rhythmic activity, showing mobilization of CNS regulatory processes and optimization of work of the brain as a whole, occurs due to the local resonance interaction between structurized external radiation and the ones of the brain tissues.

So, it is possible to claim that NEMA is a highly effective instrument, arresting a negative effect electromagnetic radiation exerts on a man.

In 2002, AIREZ neutralizer of electromagnetic anomalies was a gold medal winner at the 51st World Salon of Innovations and New Technologies "Brussels-Eureka 2002".



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