

## PROTECTION AGAINST ELECTROMAGNETIC RADIATION BY TRANSFORMATION OF THE RADIATION ITSELF

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**Keywords:** Radiation, Electromagnetic radiation, Protection from radiation, BIO-SPH

**Abstract:** The entire life on Earth functions or is under the influence of electromagnetic field / radiation. Human beings, as all the other living organisms, depend on that electromagnetic field created by the magma within the Earth and the Sun. On the other hand, each destructive electromagnetic field can be a serious threat to the health and life of the living organisms on Earth.

As a perfect organism, Man is an energy and physical entity, sensitive to many factors happening in the environment, on planet Earth and the universe. From that point of view, the cellular function of the human organism is over-sensitive to numerous endogenous and exogenous factors among which are electromagnetic fields. The process of research of the danger brought by those electromagnetic fields over the entire living world started a fairly long time ago; however, serious and important results regarding the unfavorable effects of electromagnetic radiations and the protection against them started in 1989 and are still in process. They commenced at the Sunray Research Center in Skopje. The statistical elaboration covers over 20,000 persons and 8,000 cows, oxen and calves. The analyses led to the conclusion that the bedrooms or working premises of 95 % of the persons suffering from malignant diseases were exposed to geo-pathogenic or cosmic radiation sources. The new technical solution named Neutralizer-Transformer of BIO-SPH was constructed in view of the protection against such sources of radiation. Through wave interference, this device is capable to transform the electric component from the lower frequencies of the electromagnetic field from electric into magnetic and thus enable for normal cell function. The microscopic cell analysis and the results of the measurement of the tension of the electric component in  $\kappa\Omega$  confirmed the influence of the electromagnetic field on the cell function. The said BIO-SPH Neutralizer-Transformer, designed and manufactured by the Skopje Sunray Research Center proved to provide serious practical protection against electromagnetic radiations.

## ЗАЩИТА ОТ ЕЛЕКТРОМАГНИТНА РАДИАЦИЯ

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**Клучови думи:** Радиација, Електромагнитна радиација, Заштита од радиација, Био-СПХ

### Introduction

It is known that electromagnetic radiation is a two-component source of threat to the environment consisting of an electric and a magnetic component. At the same time, there is the geomagnetic field on which the entire living world in encoded and which is one of the conditions for proper development of the living beings on Earth. Starting from this fact, each living being functions through cellular exchange of elements and the transformation of electric component into a chemical one.

Thanks to the geomagnetic field, Earth is surrounded by ionosphere – a layer of diluted ionized gases with a high concentration of ions and free electrons, located at the height of 50–70 km to 400–450 km from the planet surface. Earth's atmosphere and ionosphere absorb UV and X rays from the Sun and other cosmic radiation sources. Without ionosphere and the ozone layer, the dangerous (cosmic) radiations are able to destroy all the living beings on Earth. Earth's electromagnetic field, known as geo-electromagnetic field is very weak, but has a key role to all living organisms. Geomagnetic field stretches over approximately ten thousand kilometers all around planet Earth. In case of decrease in the electromagnetic field, the effect of the cosmic sources of radiation would be lethal.

Natural sources of radiation were known to the antique civilizations as well. The condition of people's electromagnetic field, which has both electric and magnetic components and is known as aura is a very important element for a normal life on both physical and mental plan.

The process of cellular interaction is carried out through electromagnetic exchanges. Human beings are very sensitive to light, sound, radiation, temperature differences and other external and internal factors. Special attention should be paid to the electromagnetic field in all its types and influences on the living beings.

Another source of radiation appeared in the beginning of the 20<sup>th</sup> century: those were the technological (artificial) sources of radiation, which have been and more usurping our environment. Artificial radiation sources include all electricity transferring and usable devices such as: mobile and relay telephony emitters, radar systems, long-distance power transmission lines, transformers and other appliances and tools used in our everyday lives.

The danger of exposure to radiation has existed since the beginning of life on Earth, and includes people in many cases, since they were unable to predict the ever threatening dangers, such as earthquakes, magnetic inversions, solar storms and other global environmental catastrophes. However, in other instances, knowing and detecting the dangers on time were skills of special importance for human existence. If people detected them, they would be able to protect themselves against their influence. One of the serious dangers threatening mankind are the natural sources of electromagnetic radiations of which the existence and unfavorable influence were known to mankind since long time ago.

The human beings learned about life from their own experience and the tragedies they lived through. Thus, humanity became aware of the presence of the invisible but serious killer – radiations and people started to select healthy locations on which to build their houses. In the far past, people relied on their instinct and the sensibility of animals. Ancient peoples realized that there were some locations on which people contract diseases more easily or die early, and locations enabling them to live in good health and for many years. Hence, they believed that each location has its spirit (spiritus loci). They believed that the health and life of the inhabitants of the selected location will depend on its spirit.

All this proves that the radiations were known to the people in antiquity and they successfully dealt with it by the most secure method – choice of healthy living locations.

### Material and Methods

Emigrating to the cities from the villages people nowadays are completely unaware about the location of their future homes. They have been built regardless of whether they shall be located on a geopathology or comspathology area; besides, the technical radiation sources are becoming ever more frequent, dalaging our health and lives.

What is an Electromagnetic Wave?

Different electromagnetic radiations are determined as per their frequencies, Fig. 1 and Fig. 2.

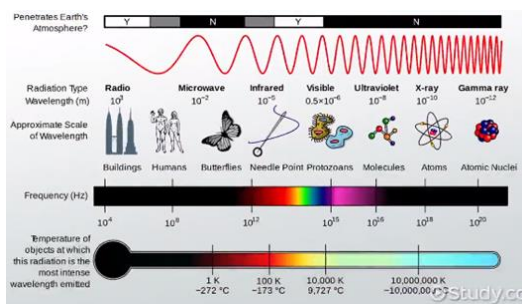


Fig. 1. Division of the electromagnetic field

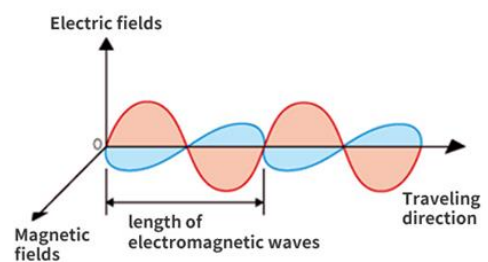


Fig. 2. An electromagnetic wave

There are other waves besides the electromagnetic ones: the mechanical and light, Fig. 3 which are not subject of this paper.

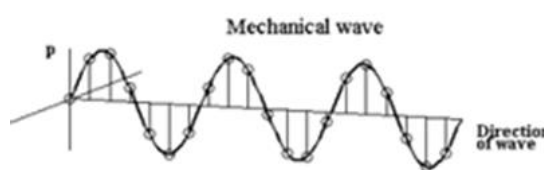


Fig. 3. A mechanical and a light wave

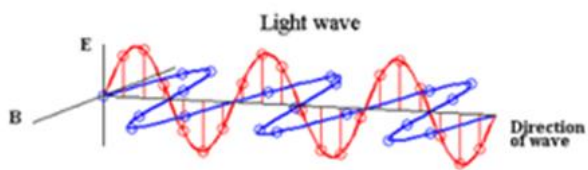


Fig. 4. A light wave

An electromagnetic wave consists of two components: an electric field and a magnetic field. Generally, a wave refers to a phenomenon where vibrations are transmitted. In the case of an electromagnetic wave, an electric field and a magnetic field are transmitted through the space while vibrating alternately. At a point that is well away from the radiation source, the electric field and the magnetic field vibrate on a surface that is vertical to the traveling direction, and the directions of the vibrations of the electric field and the magnetic field are vertical to each other. Generally, the intensity of the electromagnetic wave per unit area is indicated with V/m and mG, which apply to the intensity of the electric field and that of the magnetic field, respectively.

**Protection with electromagnetic shield**

An electromagnetic wave shield reduces the energy of electromagnetic waves by means of the reflection, absorption, and multiple reflection of the waves. By attenuating the electromagnetic waves, the shield avoids disruptions to precision equipment.

In addition, electromagnetic waves not only go straight but may also be diffracted just as light is, depending on the frequency. Accordingly, when using a shielding material, it should be kept in mind that the electromagnetic wave may be diffracted around the shield and reach the part to be shielded.

**Reflection Loss**

This loss occurs at the boundary between the shielding material surface and the air. The level of the loss is determined by the conductivity of the shielding material, irrespective of the thickness of the shield Fig 5.

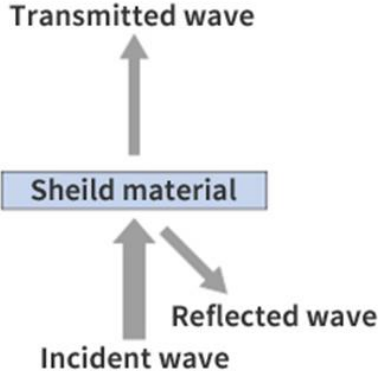


Fig. 5. Reflection

**Absorption Loss**

This loss occurs due to the excess current that is generated when the electromagnetic wave passes through the shielding material. The level of the loss is determined by the thickness, magnetic permeability, and conductivity of the shielding material Fig. 6–7.

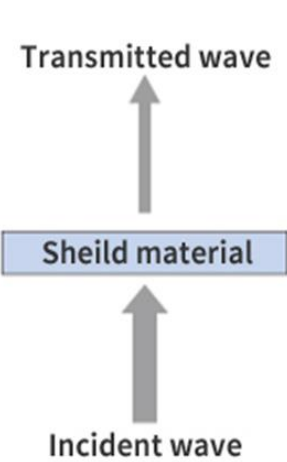


Fig. 6

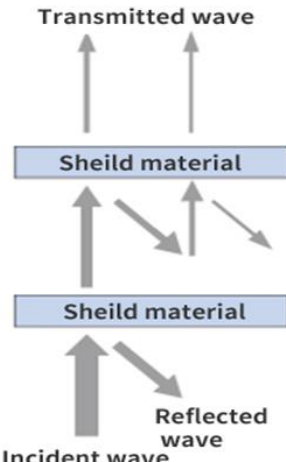


Fig. 7

### Multiple Reflection Loss

This loss occurs where the electromagnetic wave is reflected repeatedly in the shielding material (Fig. 6 and Fig. 7).

### Measuring Method of Electromagnetic Wave Shielding Performance

#### Advanced Method

This is a standard measurement method for assessing the properties of an electromagnetic wave shield.

The measurement is made by transmitting an electromagnetic wave of a specific frequency inside the shield box, receiving the electric field and magnetic field that pass through the sample, and measuring the level of attenuation caused by passing through the sample. The measurement can be made within the range of 10 to 10,000 MHz, and the shielding ratios of the electric field and magnetic field corresponding to the frequency are to be clearly stated.

#### Bekiscan method

This method is to irradiate 10 GHz fixed electromagnetic waves over the surface of the sample plate by using Bekiscan, the BEKAERT simple measurement device for electromagnetic wave reflectivity, and measure the reflecting field intensity. The result is expressed as relative strength to the reflective strength of a stainless-steel plate, which is a standard sample.

### Resistivity

With this method, resistivity is used as an alternative to the electromagnetic shield property. In other words, the lower the resistivity, the higher the electromagnetic shield property. There are three standards: insulation resistance, volume resistance, and surface resistance.

### Shielding Performance Index

Shielding performance is expressed in decibels (dB). The value expresses the degree to which the electromagnetic wave was attenuated. The ratio between the intensity of the electric field before shielding and that after shielding (attenuation) is expressed in log.

Shielding performance (dB) =  $20 \times \log$  (intensity of electric field after shielding / intensity of electric field before shielding)

For example, if shielding has reduced the intensity of the electromagnetic wave to:

- 1/10, the value is -20dB (shielding ratio: 90 %)
- 1/100, the value is -40dB (shielding ratio: 99 %)
- 1/1000, the value is -60dB (shielding ratio: 99.9 %)
- 1/10000, the value is -80dB (shielding ratio: 99.99 %)

It is said that shielding performance of 30 dB or above is generally desirable to prevent the malfunction of electronic equipment such as computers.

Each presence in the cell of the living organisms can impede its function (Fig. 8 and Fig. 9).

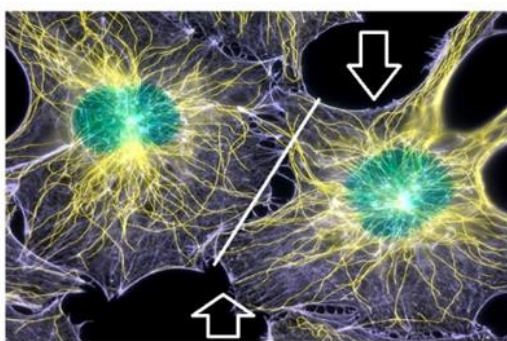


Fig. 8. Impeding intercellular communication by electromagnetic radiations

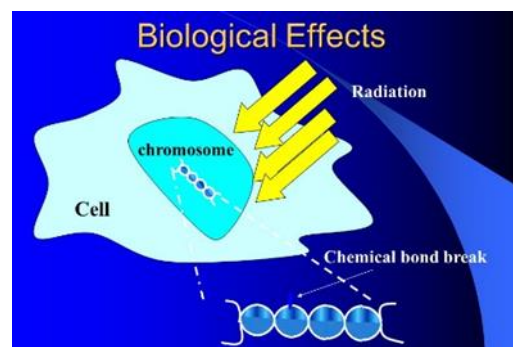


Fig. 9. Biological effect of electromagnetic radiations on chromosomes

### Protection against the Dangerous Influence of Electromagnetic Radiations by Transformation of the Electrical Component of the Electromagnetic Field

This type of protection was unknown to science until recently, but the construction of the patent in 1922 it has been giving phenomenal results and has become a known method. A similar, but not the same is the method of destroying the waves by another wave source (Fig. 10), where as in A) there is one wave source, while, as in B) there is another appropriate source, point 5, whose waves

buffer the waves of point 2. This type of protection is not efficient as the point 5 waves can be destructive on the cellular level of the biological effect. These methods are most frequently applied for security and military purposes in blocking radio frequencies etc.

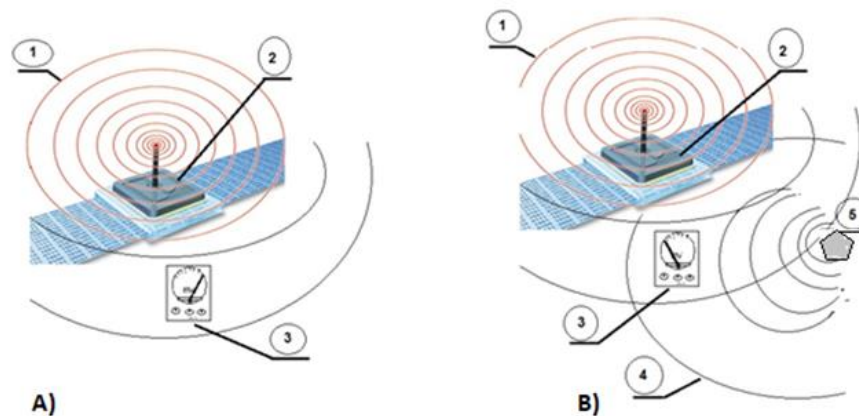


Fig. 10. A) and B) Principle of influence of opposed waves  
 Legend: A) 1. waves, 2. wave source, 3. wave meter.  
 B) 1. waves, 2. wave source, 3. wave meter, 4. Opposed waves from another source, Point 5.

In electromagnetic waves there are oscillations of the electric and the magnet component (Fig. 11).

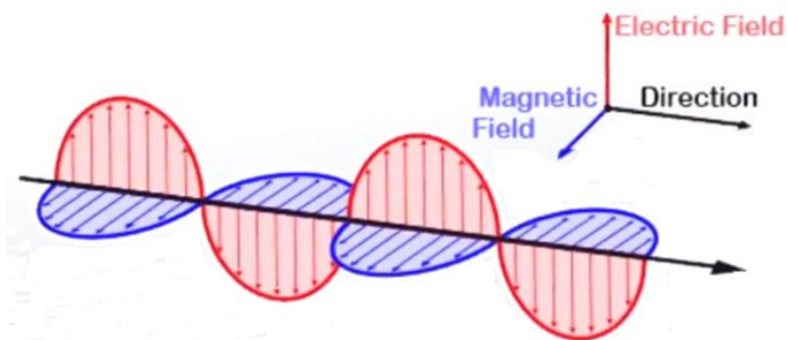


Fig. 11. Harmonized movement of the electromagnetic wave with its both components

The transformation of the electric component into a magnetic one results in the reduction of the intensity of the electrical component amplitude in favor of the magnetic one (Fig. 12) which provides for a safe and radiation-free living environment.

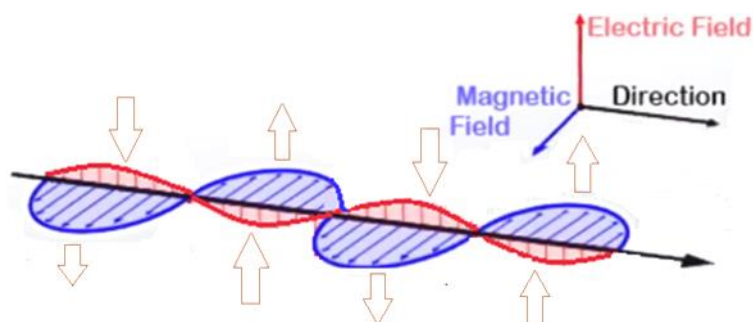
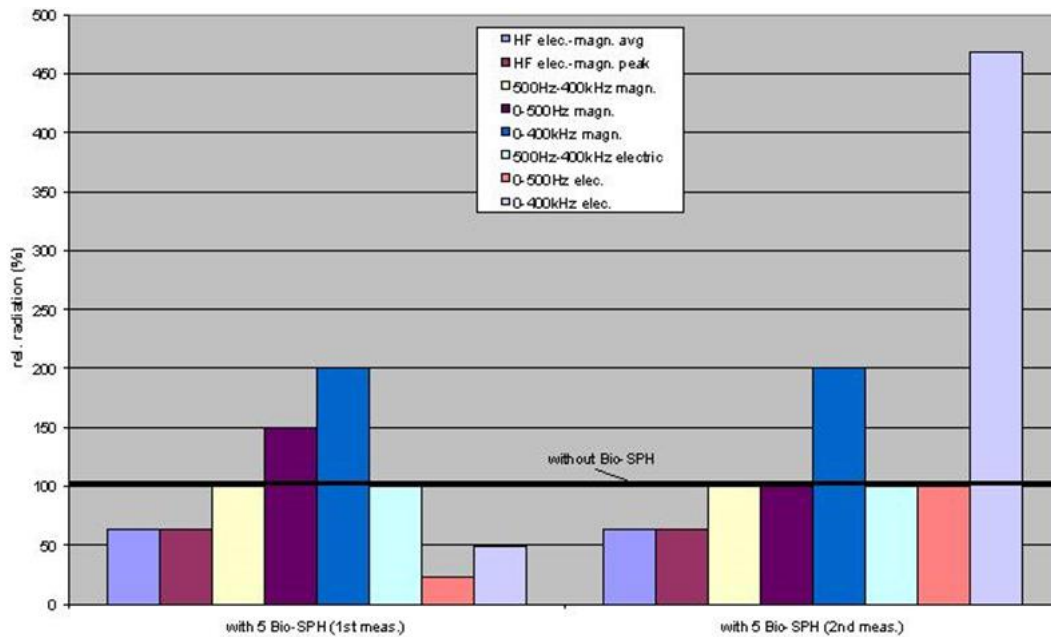


Fig. 12. Movement of an electromagnetic wave with a visibly reduced intensity of the electric component, after the application of the BIO-SPH protective transformer



The result of the reduction of the electric component on account of the magnetic one is shown on the graph 1 below. It shows that the application of the new BIO-SPH technical solution the electric component of up to 400 kHz has been visibly reduced, while the magnetic component of 0 to 500 Hz is increased to a certain level. It can be concluded that this method of protection against electromagnetic radiations is easily applicable and efficient in practice. The increased magnetic component of 0 to 500 Hz leaves positive effects on the cellular level of the living beings.



Graph 1. Frequency spectre with and without the BIO-SPH protection

The construction of the technical solution for protection against electromagnetic radiation is a scientific and technical solution consisting of primarily passive electric material elements shown on Fig. 13 and 14.

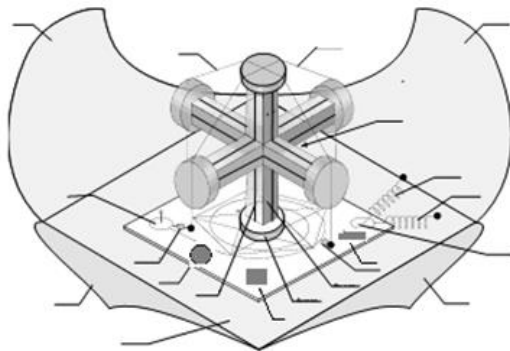


Fig. 13. Drawing of the technical solution of the transformation of the electric into a magnetic component



Fig. 14. One of the designs of the technical solution for protection against electromagnetic radiation

The passive electromagnetic elements are specially constructed using a constant geomagnetic field and free space around it, its entirety being capable to activate and transform the electric component into a magnetic one.

**Purpose**

The purpose of this paper is to prove the success of the wider application of the protection against electromagnetic radiations through transformation of the electric component into a magnetic one.

## Conclusion

It can be concluded from the above that the protective feature of the BIO-SPH against electromagnetic radiation is reflected in the transformation of the electricity component into a magnetic one, thus protecting also the biological process on a cellular level, providing successful and humane overall protection against electromagnetic radiations.

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