

Bioplasma Concept of Consciousness

Adam Grzegorz Adamski

Abstract

The great theories of the twentieth century, such as quantum physics, cybernetics, systems theory, synergetics, molecular biology, bioelectronics didn't leave psychology unaffected. Quantum physics is not only at the root of most of the achievements of electronics, solid-state physics, laser science, nuclear physics, biochemistry and molecular biology, but also forms the foundation of psychology. This way of interpreting the mental phenomena shows that man is not only a purely biological construct, but that bioelectronic, biochemical and informational processes also play a role. They are responsible for the development of the mental processes of man. Man's biological system uses for communication not only the biochemical means, but also electromagnetic and acoustic waves, spin fields and bioplasma. An important role in the history of research into the link between the plasma and the life processes has been played by the works of Sedlak, Iniuszyn and Zona. Bioplasma is a state of mutually interacting interconnected fields and positively and negatively charged particles in an organic semiconductor. Bioplasma is seated in the protein semiconductors, or piezoelectric organic compounds. To have charged particles and excited states in both plasma and in the body, it is necessary to provide energy in various forms. This process is done by the chemical release of energy through the metabolic processes, and through the provision of energy from the outside, through the human senses. Bioplasma is a tangible medium of life and is the ground of consciousness.

Key Words: Biological system, bioelectronic, brain, consciousness, bioplasma

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1. The bioelectrical aspect of the biological system

The discussion in science about the roles that quantum mechanics might or might not play in the theory of consciousness/mind has been becoming increasingly greater and sharper. On one side of this debate stand conventional neuroscientists, who assert that brain science must look to the neuron for understanding. On the other side are certain physicists, who suggest that the rules of quantum theory might influence the dynamics of consciousness. However,

consciousness and mind are not separate from matter. The submicroscopic world of the human brain gives rise to consciousness, mind. We are not able to make a sharp separation between the mind and the matter. Thus ultimately there is no "mind" that can be separated from "matter" and no "matter" that can be separated from "mind". The brain is a mixed physical system composed of the macroscopic neuron system and an additional microscopic system. The former consists of pathway conduction of neural impulses. The latter is assumed to be a quantum mechanical many-body system interacting with the macroscopic neuron system (Adamski, 2006).

Attempts to understand the brain and consciousness have been mostly based on restrictive Newtonian classical science and

Corresponding author: Adam Adamski

Address: Uniwersytet Śląski w Katowicach- Poland. Wydz. Etnologii i Nauk o Edukacji w Cieszynie 43-400 Cieszyn, ul Bielska 65

Phone: + 512 919 624

e-mail: a_adamski@go2.pl

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exclusively material realm. Although the powers of understanding of human senses and the scope of Newtonian science are limited to three spatial dimensions, the scope of our universe is not. Many of the natural phenomena happening within our universe transcend the three dimensional scene. Therefore it is not possible to assume that the mechanisms of operation of the brain and consciousness remain imprisoned within the confines of Isaac Newton's three dimensional material universes. Attempts to understand the brain-mind problem within Newton's universe over the centuries have introduced divisions and concepts that have become detrimental to having a new look at it from the point of view of modern science, more specifically quantum mechanics. Intellectual acrobatics within the domain of classical science to find solutions to a problem that transcends the limits of classic science cannot yield any valid solution. In trying to interpret the mechanisms of operation of the human brain and developing a model for consciousness that explains all practical observations, it is necessary first of all to jettison traditional baggage and clean up the scene. It is also necessary to enlist all the observed properties of the brain and consciousness and ensure that the developed model explains all of them (Atmanspacher, 2004; Adamski, 2007; 2008).

Quantum mechanics rests upon two fundamental properties. Firstly, it is based on the superposition principle (superposition of vector states of the Hilbert space). Secondly, it is based on a fundamental phenomenon called quantum entanglement. This phenomenon manifests itself by the fact that a system of two, or several, quantum entangled particles is "non-separable". In technical terms this means that the wave function of the two-particle system does not factorize into a product of a wave function for each particle. The quantum system describing the two-particle system is a global system, not a local one. Moreover, in such a system the particles are heavily correlated. Therefore, if we measure a certain property of one of the two particles, destroying in this way the "non-separability" of the system, we can predict with certainty the corresponding property of the other particle, even if it is at the other

extreme of the universe. However, there are caveats: the quantum specificity indicates that this property is not determined beforehand, i.e. before measurement. Quantum physics is a non-local and non-realistic theory. Quantum entanglement and the property of "non-separability" are properties that are fundamentally quantum; they do not exist in the "classical physics" (Gribbin, 1998b).

There is general agreement that the seat of consciousness is the brain. When a person is awake, information about his/her surroundings is presented to his/her brain by his/her sense organs. The brain processes and computes millions of bits of information presented to it every second by the sensory organs and present the processed information to consciousness. Through this process consciousness remains aware of the surroundings and we say that the person is conscious of his/her surroundings. When this link between consciousness and the surroundings is interrupted and consciousness is not able to be aware of events in its surroundings we say that the person is unconscious (Baaquie and Martin, 2005).

Beside traditional, well-known chemical reactions, there arises a new reality pertaining to the bioelectronic model of life. In this model, it is assumed that the biological system exhibits physical properties of biological mass and functions as a quantum construction. Basic organic compounds, such as proteins, nucleic acids or melanin, are semiconductors and possess the ability to activate charges without participation of ions. Semiconductors are good converters of chemical, thermal and electromagnetic energy into electric energy, and the other way round. They also possess other features such as increased conduction accompanying an increase in temperature, a significant jump in conduction in the presence of minimal donor or acceptor admixtures, the photoelectric phenomenon, i.e. increased conduction under the influence of photons and quantum emission of the electromagnetic wave. A semiconductor can be a quantum generator of electrons and photons (Gribbin 1998a). In an alternating electric field, proteins, amino acids, DNA, RNA, as well as plant and animal tissues are

subjected to electrostriction and become quantum generators of phonons, that are the acoustic wave. This occurs because the structures in question are at the same time piezo- and pyroelectric, which means they possess the capacity for thermal and mechanical polarization (Athenstaedt, 1972; 1987).

Piezoelectrics convert mechanical energy into electric energy, while pyroelectrics convert thermal energy into electric energy (Chełkowski, 1979; p.324). Acoustic effects may take place not only in piezoelectrics, but also in semiconductors. A semiconductor can manage electrons in their induced state. In such cases, nonradiative recombination transmits the energy to the molecular network in the form of quantum acoustic vibration. The transition from the induced state to the basic state has got thus two possibilities: the generation of photon or the generation of phonon. Biological mass is then continually shaken and “quantum-chatty” (Sedlak, 1988; p.63).

Life is a result of all the chemical, electrical, magnetic, optical and acoustic events occurring in the living organism, in the system of organic semiconductors, piezo- and pyroelectrics (Sedlak, 1988; p.119). This means that biological tissues have ample capacity for activating electrons, generating fields and for constant or variable polarization independent of the chemical character and ion transportation. Biological mass can thus be electrically active in a non-chemical manner. Therefore life takes place not in a chemical or electronic system, but to some extent among these two processes. In a living organism, chemical and electronic reactions have been “sewn up”. In this way, a “quantum seam of life” has come into existence as the smallest functional unit in the biological system. The entire “quantum link of life” takes place in the molecular network shaken by acoustic quanta (Sedlak, 2000; p.71).

The idea of the coupling of bioelectrical and biochemical process in the human organism is alien to the classical research on the psychological life. This new approach postulates a holistic account of the human being and his environment. The model, in referring to psychology, is very inspiring, because it postulates the reception

of information from the environment not only via sense receptors, but also through the entire mass of the biological organism, understood as organic piezoelectrics, pyroelectrics and semiconductors. This means that the organism receives information from the environment not only through receptors, but also beyond the sphere of sensory experience in the manner typical for semiconductors, that is with conversion to electric energy.

The biological mass has been utilized by nature to create an electronic device working analogically to the technical electronic systems, but on the basis of organic semiconductors, piezo- and pyroelectrics. The device is powered by chemical energy of a metabolic origin, by electromagnetic energy received among other things by melanin, which combines with the photoelectric effects, as well as by thermal and mechanical energy converted by piezo- and pyroelectrics into electric energy (Sedlak, 2000).

Modern electronics use biomolecules, such as DNA, RNA, proteins and pigments as an electronic material. Additionally, certain biological structures treat as natural electronic device, for example cellular microtubules, cytoskeleton and neurons as biological microprocessors (Hameroff and Rasmussen, 1992), whereas enzymes as natural diodes and transistors (Cardenas, 1991). Apart from the attempts at using biomaterials, particularly enzymes in the so-called biocomputer biotechnology, they are broadly used in constructing biosensors (Bartlett and Pratt, 1993; Wnuk, 1996). Interesting here is Liberman’s concept of biomolecular quantum computers, which sees the nerve cell as a computer (Liberman, 1996).

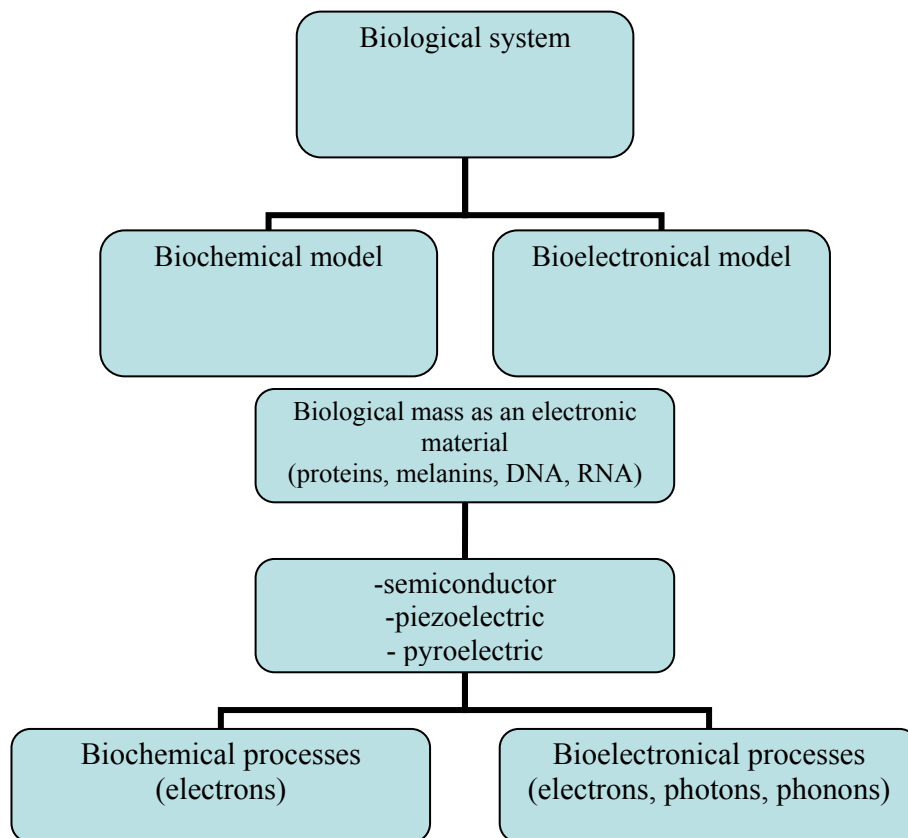
The basic energy source for this device is chemical energy understood as electrons bound and freed in the metabolizing process. Impoverishment of chemical metabolism in man causes a change in electromagnetic fields and waves in the particles of the human organism, as it is in the case of old age. In this period of life the organic semiconductors grow old and their exchange no longer gets through – there is a disproportion between catabolism and anabolism in favor of the former and with

the deficiency of the latter. Along with that, the electronic action becomes less effective. Quantum efficiency decreases and the amount of the semiconductor which is water diminish and cannot be supplemented from the outside (Sedlak, 1987).

Dehydration of the organism increases with age and the reserves of melanin decrease as the organism grows older. Melanin has the ability to bind protons and electrons (Matuszak, 2001). Melanin deficiency disturbs that relation, whereas an increase of the melanin content in the biological system is accompanied by an increased circulation of electrons and hence an increased number of electron inductions, highly enhanced generation of photons by radioactive recombinations and generation of quantum acoustic states, that is phonons, by non-radiative transitions. Delocalized electrons and protons, as well as proton

semiconductions in biological membranes where active protons are fundamental centers of energy and information transduction play an important role in the structure and functioning of biosystems (Morowitz 1978; Conrad, 1990).

Sławiński (2001) claims that life processes and light are inseparable and internally connected due to their electromagnetic nature. Light plays a significant energetic and regulatory role in living organisms and in the entire ecosystem, for instance in photosynthesis, in the process of seeing, in biological rhythms, etc. Changes in the intensity of photon emission are functionally connected with disturbances of homeostasis and their measurements specify the state of organism's vitality and the capacity for environmental adaptation (Sławiński, 1990).



Life is a set of chemical reactions coupled with the processes of bioelectronics death is a disruption of these processes.

In this new paradigm bioelectronics starts to draw a cognitive psychology showing the quantum of human knowledge

in terms of quantum processes. Electronic interpretation of the living system is proving to be very inspiring, it takes into account the fact that the organ recipients of information from the environment are not only receptors inducing sensuous, perceptual and motor systems, but also a whole bunch of biological organism construed as biological piezoelectrics and semiconductors (Sedlak, 1979).

2. Bioplasma and its role in building the structure of consciousness

In the discussions on consciousness we encounter many difficulties, which arise from the lack of unified theory of consciousness, both in the natural sciences and psychology. Do we really know what consciousness is in the ontological sense, whether it is a structure, a process, an act, a product or any other phenomenon? Human consciousness includes not only knowledge of reality, but also self-knowledge or awareness of the human mind itself by its own actions, feelings, thoughts and motives of conduct, their own situation in the world and society. Awareness of himself as a main characteristic of personality is not an innate characteristic. It is developed gradually in the course of our lives, from early childhood through school years, adolescence, to adulthood (Lauster, 1995).

In psychology, according to Zaborowski, consciousness is understood as a process of encoding and processing information about himself and integrating it with the surrounding world. Psychological ground encoding process is attention, information processing relates to memory and thinking, and integration of information associated with consciousness. Reflective self-consciousness is associated with integrating information about himself on the basis of notions, patterns and abstract thinking. It is the highest stage of human psychological development; it has a factor integrating mental phenomena as memory, attention, thinking, imagination, emotional experiences that have developed in the course of human evolution (Zaborowski, 1998).

Self-awareness gives us a sense of personal history and identity. It conforms functions to integrate, select and reconcile

information related to his own person. It covers not only the actual survival of individuals, but is able to return to the past appreciation of the course of his life, his difficulties, mistakes, achievements, and plan his future tasks and goals in life (Zaborowski, 1998).

Awareness coworks with the brain, but the brain can function during different states: sleep, anesthesia, meditation, being under the influence of drugs. A disease and above mentioned states cause impairment of consciousness, called altered states of consciousness. Distorted observation appear in these altered states of consciousness, such as visual perception distortion of time and space, the sense of separation from the body's own self, the needs and the problems of life. Glare, joy, ecstasy and a sense of fusion with others and the world also may occur. Awareness may also have the nature of an act of cognition, of decision, of imagining something (Wojciszke, 1980).

Sedlak recognizes that the integrating factor of the biological system is bioplasma Hameroff (1990), Hameroff and Penrose (1996), Fröhlich (1968) and Zohar believe that the consistency of the biosystem is due to the Bose-Einstein condensate. According to Popp (1979; 1983) coherent light emitted from DNA is used to create a Bose-Einstein condensate and the structure of consciousness. Cells are informed by the development cell structure and by the electromagnetic field are called biochemical processes in the cell. Biophoton radiation is light with a high degree of coherence. This consistent information is able to repair the faulty system and lead to a harmonious state. Popp found that they can manage the process of awareness and are responsible for its nature, because light is the element determining the processes of life. What is bioplasma according to the interpretation by Sedlak? In order to explain this term it is necessary to define the plasma. Plasma is a natural center, which combines chemical and physical effects. Changes in chemical composition and physical factors affect changes in its concentration, particle mass and the size of their electric and magnetic charges, which leads to changes in oscillation. Plasma has a great natural dynamics - all of its particles constantly

"feel" the behavior of other particles, responding to the changes in their movement. Movement of each endowed with a cargo particle is made with a number of other oppositely charged particles. This property is a consequence of the impact of electric and magnetic fields, thermal, chemical and changes in dielectric properties of the medium. Plasma has many properties that are not observable in other physical states. One of the most important features is a collaborative community response to all particles on the distortion of the balance. Interaction of particles in the plasma leads not only to the change of direction but also of the speed of the exchange of energy between the particles. As a result of collisions a particle undergoes a small angular displacement. This means that there is a change of momentum of the particle, and therefore in the process of collision defined part of the kinetic energy of accelerated particles will be transferred to their partners. Plasma responds to magnetic and electric fields. If the electric field parallel to the magnetic direction is along her it will accelerate or delay the particles (Sedlak, 1975; 1994).

An important attribute of bioplasma is combination of different kinds of fields and particles (Sedlak, 1970). Therefore it is concluded that bioplasma is characterized by a common system for wave energy and mass (particles such as electrons, photons, phonons (Sedlak, 1980). Bioplasma is organized by its surroundings, but also has the ability to self-organize, which may occur by the magnetic fields generated by the orderly movement of a sufficient number of charged particles. It is a phenomenon known as the plasma pinch. Plasma is a natural material and the material life of the universe (Sedlak, 1977). Bioplasma is linked to life's processes (metabolism and electronic processes in semiconductors protein (Sedlak, 1979).

According to Sedlak bioplasma has its own "diffraction grid", electromagnetic and acoustic, therefore, any disturbance to the power grid is information for the biosystem. Bioplasma all "knows" what happened in and around it performs. Inform the energy situation and the whole part. Bioplasma is a generator of information, its coordinator,

media and transformer (Sedlak, 1972).

The habitats of bioplasma are protein semiconductors, piezoelectric or organic compounds such as melanin, neuromelanin, melatonin, DNA, RNA, etc. Bioplasma needs for the functioning energy in different forms. To the nature of bioplasma belong the symmetry of electric, magnetic, but also the length and symmetry of matter, which is unity in diversity and carries the mark of integrating factor information. Changing the information disclosed in the electrical profile and change biofield plasma. This refers to changes in temperature, pressure, gravity, electric fields, magnetic, torsion, chemical changes, acoustic and optical. Each type of energy delivered to the plasma increases the electrical symmetries, gives the speed of particles, and prevents destabilization processes, namely degradation of bioplasma (Sedlak, 1980; Zon, 1994).

Bioplasma in the body performs the same tasks that are assigned to consciousness in psychology. Thanks to bioplasma the organism may be considered of its structure and function together. Here at the bottom of the quantum of life there is no difference between life and consciousness, between the psyche and the bios. There is unity and the quantum level in the protein environment formed a vital link between the electrons, photons and phonons in piezoelectric medium organic semiconductors. Here merged interaction between the chemical and electronic process (Sedlak, 1973).

An example of this may be ontogenetic development of man, in which the important role of merit for two periods, preschool period and the period of adolescence. The period of adolescence is a period of enormous changes of biological, physiological, but also psychological. These activate the processes of quantum states that have an impact on the development of bioplasma in the brain and the whole biological system. Increased level of bioplasma in the nervous system of man contributes to the emergence of reflective consciousness (Sedlak, 1979; Zon, 1984; 1986).

The end stage of ontogeny may be characterized by the weakening of the degree of collectivity in interactions within the

clusters in the plasma biosystem, decrease of the coupling between them, or the disintegration of the plasma in clusters of plasma. The disintegration of the plasma from the organ can lead to the dysfunction of the entire biological system and ultimately to his death. A similar point of view about bioplasma is presented by Injuszyn (Injuszyn, 1972; 1974) who believes that the concentration of plasma takes different values in different parts of the body. Of the tissue structures and cellular highest concentration of plasma electron-electron and a whole proton and saturation wave process is characterized by bioplasma spinal cord and brain.

According to the authors attributing somatic awareness, reflective, subconscious and unconscious influences to bioplasma is justified. In the theories presented by different authors, one sees the information center such as: the electromagnetic spin, torsion fields, or Bose-Einstein condensate. Significant role in the formation of mental states and sensory is played by melanin, neuromelanin and melatonin. These substances play a very important role in the human ontogenesis, in shaping: adolescence and the reflective, consciousness abstract thought and higher feelings. The period of adolescence in the child's biological system is a continuous increase in melanin and melatonin, during adolescence there is a reduction of these substances, and every year there is less of them in the body. With the decrease of melanin and melatonin, an increase in free radicals, which were previously absorbed by these substances, can be observed. This results in an increased activity of different torsion fields (vortex fields) that have an impact on the growth of a density wave bioplasma and this in turn gives rise to the development of the mind in the form of abstract thinking and reflective consciousness.

Melanin has the ability both to absorb reactive hydroxyl free radicals, quenching singlet oxygen and excited states of some photo sensitizers, and inhibition of lipid peroxidation (Pilas *et al.*, 1988), on the other part to produce radicals. In this context, melanin can act as both an oxidant and reducer (Sarna, 1992).

The most important feature is the

ability of melanin to absorb light, retention, storage and recovery of energy. It protects against oxidative stress by reactive free radicals: peroxy, hydroxy and singlet oxygen quenching of excited states (King, 2001).

Melanin is made up of neurotransmitters and is able to change a light in tone, and vice versa. Color and light is processed in the music for the whole body. Each frequency produces its own color note (Nicolaus, 1997; p.354). Melanin is not only semiconductor, but also at room temperature superconductor. Melanin in terms of electronic and physical is

characterized by such features as:

- donor-acceptor properties,
- the ability to proton conductivity (Matuszak, 2001),
- the ability to absorb all wavelengths of light,
- properties photoconductor and amorphous semiconductor (Strzelecka, 1982),
- increased resistance to light and ultraviolet light,
- generation of electrons and photons,
- high demand for oxygen (Prota, 1993),
- selective vulnerability to phonons, which means that cells with melanin are selectively sensitive to sound waves. (Sarna and Swartz, 1985),
- melanin may function as a transmitter of photons and phonons in the process of reverse (McGinnes *et al.*, 1974);
- paramagnetic properties (Schultz *et al.*, 1987).
- melanin is piezoelectrics and pyroelectrics, which allows it to transform mechanical, thermal acoustic energy, electricity, and with it the electric field,
- aggregate all types of metal ions,
- combines the effects of important vitamins and innumerable quantities of drugs, protects against UV ionizing radiation by producing solid free

radicals.

Melanin accumulates in the cells of the nucleus, where the genetic material (DNA) is, in order to protect the genetic code from the damage from the UV-rays (Prota, 2000).

These properties of melanin reveal that it has large resources of bioplasma, which affects the development and degradation of personality. Further understanding of melanin will bring essential contribution to the development of psychology, especially in understanding what constitutes the essence of the nature of the psychological processes. Possession of melanin, neuromelanin and bioplasma in the body forces the science to the new interpretation of the mechanism of functioning of sensory perception and the nature of mental human processes.

With the semiconductor properties of proteins and melanin electrons can travel over long distances without losing energy. Ionic currents expire at short distances because the ions are much larger than electrons. In semiconductors the electron energy of the protein would be preserved and passed on as information. In terms of biological bioelectronics system has several channels - a channel electron, proton, solitons, electromagnetic, acoustic, torsion fields and bioplasma through which life is continually identifies and continues, in its essence is unchanged despite the evolution. Therefore biocommunication may be using the wave and field, wave electromagnetic, electronic and acoustic, the latter due to electrostriction biological PVDF cylinder. Piezoelectric phenomenon is to change mechanical energy into electrical energy, together with the development of electricity is accompanied by the electric field (Krajewski, 1970).

Piezoelectric placed in the alternating electric field is deformed by generating an acoustic wave. This phenomenon is referred to as electrostriction or quantum-acoustic effect. The ability of piezoelectric crystals to polarize the expense of mechanical and ability to deform the expense applied electric fields allows you to consider them in the category of electromechanical transducers (Krajewski, 1970).

Summary

Piezoelectric properties acquired the body, each with its creation on earth and they are required to run bioelectronics processes that are necessary for the functioning of the body. These processes occur throughout the body, but are especially noticeable in the system: cardiovascular, musculoskeletal while walking and gymnastics, breathing mechanoreception, bar reception, sense of hearing, as well as during sexual arousal, etc. So the essence of a biological system to piezoelectricity, pyroelectrics and semiconductor.

Semiconductors communicate using electric and magnetic fields, piezoelectric again, using electric fields and acoustic waves. Body as a semiconductor-piezoelectric system is sensitive to any kind of information to field inspection - a magnetic, electrical, thermal, mechanical, gravitational soliton fields, torsion and bioplasma, which affect the structure of the human psychosomatic and also determine the development, integration and instability of his personality. Melanin and neuromelanina during its synthesis becomes a source of wave solitons, torsion fields and bioplasma. Bioplasma is understood as a dynamic system in an organic semiconductor consisting of piezoelectric fields and particles with positive and negative charge which these processes interact with each other. Bioplasma is the result of the biofield. The total energy bioplasma consists of thermal motion, particles energy kinetic, the floating particles, the electric field, magnetic, electromagnetic, torsion and solitons (Adamski, 2009).

In conclusion, it is clear that the human biological system and particularly the brain is such a device that operates based on the biochemical processes-ionic conductivity, but also about the processes bioelectronics. In the cell processes, bioelectronic communication is made through fields and waves.

Biocommunication wave includes the effects of electromagnetic wave (McFaden, 2002; Sławiński, 1990), acoustic (Adamski, 2006a) and solitons (Brizhik 2002; 2003), field again involves the action of the electric field (Athenstaedt, 1967), magnetic and electromagnetic (Popp, 1983), gravity

(Shipov, 1994), torsion (Akimov *et al.*, 1995; Hu *et al.*, 2003; Shipov, 1993; 1995; 1997), bioplasma (Sedlak, 1979). Torsion fields are moving at a rate of N^9 , where N is the speed of light in vacuum (Shipov, 1997).

A whole range of biocommunication

creates the structure of life and consciousness, it means that life and consciousness in the brain last until they exhaust all the processes. When these processes expire, loss of consciousness and death of the organism occur.

References

- Adamski A. Melanina, enzymy, melatonina w zdrowiu i chorobie. Rybni: Wyd. Magnum, 2005.
- Adamski A. Układ biologiczny jako urządzenie elektroniczne w poznawaniu środowiska i samego siebie. Praca zbiorowa pod red. Adama Adamskiego. Człowiek – jego bioelektroniczna konstrukcja a percepcja muzyki. Kęty: Wyd. Drukarnia Propak, 2006.
- Adamski A. Rola procesów bioelektronicznych w kształtowaniu percepcji zmysłowej i funkcji psychicznych człowieka. Katowice: Wyd. Uniwersytet Śląski w Katowicach, 2006b.
- Adamski A. Psychologiczny wymiar czasu i przestrzeni w ontogenezie człowieka. Bielsko-Biała: Wyd. Compal, 2007.
- Adamski A. Wpływ ruchu, światła i dźwięku na rozwój osobowości człowieka. Praca zbiorowa pod red: D. Kadłubiec i A. Adamski W: Muzyka, światło, ruch w rozwoju osobowości człowieka. Bielsko- Biała: Wyd. Compal, 2009; 165 – 181.
- Akimov AE, Ohatrin AF, Loginov AV. The capture and treatment of torsion information from the cosmic images carriers, all Russian conference. The perspective informational technologies. Uljaynovsk, 27-29 September 1995.
- Akimov AE, Shipov GI. Torsion Fields and Their Experimental Manifestation, Proc. Int. Scientific Conf. New Ideas in Natural Science, St.-Petersburg, Russia, June 1996.
- Akimov AE and Tarasenko V Ya. Models of Polarized States of the Physical Vacuum and Torsion Fields, translated from Izvestiya Vysshikh Uchebnykh Zavedenii, Fizika, no:3, pp 13-23, March 1992, c1992, Plenum Publishing Corp. (NEN Oct 1997).
- Athenstaedt H. Das Pyroelectrische Verhalten und das permanente elektrische Moment von menschlichen und tierischen Sehnegebebe“. Zahnhartgewebe Zell-Forsch 1967; 81:62-73.
- Athenstaedt H. Pyroelectric behaviour of integument structures and of thermo, photo and mechanoreceptors. Zeitschrift für Anatomie und Entwicklungsgeschichte 1972; 136: 249-271.
- Athenstaedt H, Claussen H, Schaper P. Epidermis of human skin: Pyroelectric and piezoelectric sensor layer. Science 1982; 216: 1018 -1020.
- Athenstaedt H. Spontaneous polarization and pyroelectric behavior of organisms. Ferroelectrics 1987; 73:455-466.
- Atmanspacher H. Quantum theory and consciousness: an overview with selected examples. Discrete Dynamics in Nature and Society 2004; 1: 51-73.
- Baaquie B, Martin F. Quantum psyche. Quantum field. Theory of the human psyche. NeuroQuantology 2005; 3(1): 7-42;
- Bartlett PN, Prat FE. Modelling of processes in enzyme electrodes. Biosensors Bioelectronics 1993; 8/9(10): 451-462.
- Bohr N. Fizyka atomowa a wiedza ludzka Warszawa: PWN, 1965.
- Brizhik L. Energy and information transfer in biological systems. How Physics could enrich biological understanding. Proceedings of the International Workshop. Acireale, Catania, Italy, 18 – 22 September 2002.
- Brizhik L. Soliton mechanism of charge energii and information transfer in biosystem. Wyd. World Scientific Publishing . Co Ptc . Ltd. Singapore, 2003.
- Cardenas ML. Are the transistors enzyme – complexes found in vitro also transistors in vivo? If so, are they physiologically important” Journal of Theoretical Biology 1991; 52(1): 111-113.
- Chelkowski A. Fizyka dielektryków. Warszawa: PW, 1979.
- Conrad M. Superinformation processing: The feasibility of proton superflow in the living state. In: Mishra R.K.,(ed.): Molecular and biological physics of living systems, s. 159-174. Dordrecht – Boston - London: Kluwer Academic Publ, 1990.
- Fröhlich H. Long range coherence and energy storage in biological systems. Int Journal of Quantum Chem 1968; 2: 641-649.
- Gribbin J. Qis for Quantum, Weidenfeld - London: John & Mary Gribbin. 1998a
- Gribbin J. In Search of SUSY. Supersymmetry, string and the theory of everything. London: Penguin. 1998b.
- Hameroff SR, Rasmussen S. Information processing in microtubules Biomolecular automata and nanocomputers, W: Hong F (Ed) Molecular Electronics Biosensors and Biocomputers Plenum

- Pres. New York -London. Hong F.T. 1992
- Hameroff SR. Computational connectionism within neurons: A model of cytoskeletal automata subserving neural networks. *Physica D* 1990; 42: 428-449.
- Hameroff SR. Quantum consciousness in microtubules. An intraneuronal substrate for emergent consciousness. *Journal Consciousness Stud* 1994; 1: 91-11.
- Hameroff SR, Penrose R. Orchestrated reduction of quantum coherence in brain microtubules: model for consciousness. In: *Toward a Science of Consciousness - The First Tuscon Discussions and Debates*, S.R. Hameroff A. Kaszniak and A.C. Scott (eds), MIT Press, Cambridge, MA, 1996; 507-540.
- Hu HP, Wu MX. Spin-Mediated Consciousness Theory: an approach based on panproto-psychism. *Cogprints* 2003; 4: 23-34.
- Inyushin WM. Bioplasma: The fifth state of matter. In: Whyte J, Krippner S. *Future science life and the physics of paranormal phenomena* Doubleday & Comp. New York 1977, 1, s. 15-120
- Inyushin WM. Rezonansna biostimulacija i problema bioplazmy. Niekotoryje woprosy biodynamiki i bioenergetiki organizma v normie i patologii. (Materiały Republikanskoj Konferencii). Red: Dombrowskij B. A., Iniuszyn W. M., Wornina N.N., Korytnyj D., Czekurow P, Wyd. Kazachskij Gosudarstwiennyj Uniwersitet. Alma-Ata, 1972;5-8.
- Inyushin WM. Bioplazma i jej izluczenija. W: Roman A.C., (red.) *Psichiczeskaja samoregulacija*. Kazachskij. Gosudarstwiennyj Uniwersitet. Alma-Ata, 1974.
- Kawai H. Electrostriction and piezoelectricity of elongated polymers films. *Oyo Buturi* 1970; 39: 413-419.
- King R. *Melanin. A key freedom*. Chicago: Lushena Books, 2001.
- King R. *African origin of biological pchiatry* .Chicago: Lushena Books, 2001.
- Kowalczyk M. Świadomość w funkcjonowaniu umysłu człowieka Wyd. Naukowe Uniwersytetu im. Adama Mickiewicza w Poznaniu .Seria Psychologia i Pedagogika. Poznań Nr 100, 1995.
- Krajewski T. *Zagadnienie fizyki dielektryków*. Warszawa: PWN, 1970.
- Laszko E. *Introduction to systems philosophy..* Wyd. New York University Pres. New York, 1972.
- Lauster P. *Świadomość samego siebie*. Warszawa: Wyd. Świat Książki, 1995.
- Liberman EA. Cell molecular computers and biological information as the foundation of nature's laws. *Biosystems* 1996; 38:(2-3) 173-177.
- Matuszak Z. Modelowanie komputerowe własności donorowo-akceptorowych melanin. *Current Topics in Biophysics*. XI Zjazd Polskiego Towarzystwa Biofizycznego, Cieszyn 5-7 września. Cieszyn, 2001; 76- 80.
- Mc Ginnes JE, Corry P, Proctor P. Amorphous semiconductor switching in melanins. *Science* 1974; 183: 853-855.
- McFadden J. The Conscious elektromagnetic information (CEMI) Field Theory. *Journal of Consciousness Studies* 2002; 9(8):45-60.
- McFadden J. Synchronous firing and its influence on the brains electromagnetic field: Evidence for an electromagnetic theory of consciousness. *Journal of Consciousness Studies* 2002; 9(4):23-50.
- Margolis J. *Persons and minds. The prospects of nonreuctive materialism*.In: *Boston Studies in the Philosophy of Science*. Vol 57. Dordrecht – Boston 1978.
- Morowitz H J *Proton semiconductors and energy transduction in biological systems*. *American Journal of Physiology* 1978; 235(3): 99-114.
- Moskwa W, Ertel D, Adamski A. *Hipotezy o istocie świadomości a bioelektronika* Lublin: Fundacja Bioelektroniki. 1998.
- Nicolaus RA. Coloured organic semiconductors: melanins. *Rendicont. dell' Ac ademia delle Scienze Fisiche e Matematiche* 1997; LXIV: 325-360.
- Popp FA. *Biologia światła* (tłuma. z j, niemieck). Warszawa: PWN, 1992.
- Popp FA. Electromagnetic control of cell processes. *Proceedings of International Symposium on Wave Therapeutics*. (Ed) Z. W. Wolkowski, 60-94, Versailles, May 19- 20, 1979. Paris. 1983.
- Popp FA. Photon storage in biological systems. W: *Electromagnetic Bio- Information*. *Proceedings of the Symposium*, (Eds.) E. Popp, G. Becker, H. Konig, W. Psychical, 123- 149. Marburg, 5 September 1977. München, Urban Schwrzenberg, 1979.
- Prota G. Melanins and related metabolites in Black Skin. *Pigment Cell Res* 1993; 12: 73-99.
- Prota G. *The Chemistry of melanins and Melanogenesis*. *Progress in the Chemistry of Organic Natural Products* 1995; 10:94-148.
- Prota G. Melanins, melanogenesis and melanocytes: Looking at their functional significance from the chemist's viewpoint. *Pigment Cell Res* 2000; 13: 283-293.
- Sarna T, Swartz HM. *The physical properties of melanins*. Oxford University Press, 1985.
- Sarna T. Properties and function of the ocular melanin. *A Photobiophysical Review*. *J Photochem Photobiol B Biol* 1992; 12:215-258.
- Schulz TM, Kurtz S, Wolfram L, Swarz H, Sarna T. Paramagnetism in melanins: origin of the intrinsic free radical. *First Meeting of the European Society for Pigment Cell Research Sorrento*, 1987.
- Sedlak W. *Plazma fizyczna i laserowe efekty w układach biologicznych*. *Kosmos A* 1970; 19: 143-154.
- Sedlak W. *Plazma fizyczna jako podstawa bioenergetyki*. *Roczniki Filozoficzne* 1972; 20(3): 125- 148.
- Sedlak W. Wpływ świadomości na somę człowieka w bioelektronicznym kontekście. *Wychowanie Fizyczne i Sport* 1973; 2: 69-77.
- Sedlak W. *Dynamika bioplazmy i metabolizm*. *Kosmos A* 1975; 24(3): 261- 272.
- Sedlak W. *Ewolucja bioplazmy*. *Roczniki. Filozoficzne* 1975; 23(3): 25- 36.
- Sedlak W. *Piezoelektryczność związków organicznych i kwantowo akustyczne podstawy informacji biologicznej*. *Roczniki Filozoficzne* 1977; 25(4): 149 – 170.
- Sedlak W. *Bioelektronika 1967-1977*. Warszawa: Wyd. IW PAX, 1979.
- Sedlak W. *Homo electronicus*. Warszawa: Wyd. PIW, 1980.
- Sedlak W. *Postępy fizyki życia*. Warszawa: Wyd. IW PAX, 1984.

- Sedlak W. Wykłady o bioelektronice. Warszawa: Wyd. Almapress, 1987.
- Sedlak W. Inną drogą. Warszawa: Wyd. I W PAX, 1988.
- Sedlak W. Homo electronicus. Opole: Wyd. Ekomed, 1994.
- Sedlak W. Piezoelektryczność związków organicznych i kwantowo – akustyczne podsta – wy informacji biologicznej. Roczniki Filozoficzne 1977; 25(4):25.
- Sedlak W. Mała monografia bioelektroniki. Radom: Wyd. Continua, 2000.
- Sławiński J. Generowanie i emisja fotonów w układach biologicznych W: Perspektywy Bioelektroniki (Red.) J. Zon, M. Wnuk, 27-41. Lublin: RW KUL, 1984.
- Sławiński J. Obieg fotonów w układach biologicznych W : Bioelektronika 1990: Materiały VI Sympozium, (Ed.) W. Sedlak J, Zon i M. Wnuk, 189-191. Wyd. Katolicki Uniwersytet Lubelski. Lublin, 1990. p. 90-98.
- Sławiński J. Light and Life. Proceedings of SPIE 2001; 4515: 1- 7.
- Stapp HP. Mind matter and quantum mechanics. Springer-Verlag, Berlin, 1993.
- Stapp HP. Attention, intention, and will in quantum physics. Journal of Consciousness Studies 1999; 6(8/9): 143-164.
- Shipov GI. Theory of Physical Vacuum. Moskwa: M., NT-Centr, 1993.
- Shipov GI. Proceedings of the sixth seminar. Gravitational energy and gravitational waves. Moskwa: Doubna, 1994.
- Shipov GI. Theoretical estimation of electrotorsion radiation. M. Preprint N1. MITPF 1995; 21: 34-42.
- Shipov GI. Unification of interactions in the theory of physical vacuum. Preprint Nr.3. MITPF 1996; 23: 85-98.
- Szipow GI. Teorija fiziceskogo wakuma. Moskwa: Nauka, 1997.
- Strzelecka T. Semiconductor properties of natural melanins. Physiological Chemistry and Physics 1982; 14: 223-231.
- Tadeusiewicz R. New Trends in neurocybernetics. Computer methods in material. Science 2010; 10 No.1,pp. 1-7 MNiSTW:6.
- Wojciszke B. Ewolucja wyjaśniania poznawczego we współczesnej psychologii społecznej: II. Konsekwencje tematyczne dla problemu świadomości. Przegląd Psychologiczny 1980; 23: 281-308.
- Wnuk M. Istota procesów życiowych w świetle koncepcji elektromagnetycznej natury życia Lublin: Wyd, TNKUL, 1996.
- Zaborowski Z. Świadomość i samoświadomość człowieka. Warszawa: Wyd. Eneteia, 1998.
- Zon J. Plazma fizyczna w mitochondriach i cytoplazmie. Zeszyty Naukowe Stowarzyszenia PAX 1980; 3: 28-35.
- Zon J. Spadek witalności jako wynik osłabienia warunków istnienia stanu plazmowego w organizmie. W: Zon J., i Wnuk M. (ed.) Perspektywy Bioelektroniki Wyd. RW KUL, Lublin 1984; 119-126.
- Zon J. Plazma elektronowa w błonach biologicznych. Lublin: Wyd. KUL, 1986.
- Zon J. Bioplasma oraz plazma fizyczna w układach żywych. Lublin: Wyd. R W KUL, 2000.