

# The Electrical Magnetism of Maxwell (1873) Is the “Crooked Mirror” of Physical Science

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Received: March 8, 2019

Accepted: April 25, 2019

Online Published: May 6, 2019

doi:10.5539/apr.v11n3p49

URL: <http://dx.doi.org/10.5539/apr.v11n3p49>

## Abstract.

The concept of the electric magnetism Maxwell (1873) is a result of the superficial and exceptionally erroneous impression of Great Physicist from the well-known experience of Oersted. However the world scientific community adopted this erroneous impression as the ultimate truth and, following Maxwell, declared the moving electric charges to be direct sources of the magnetic field. At same time, the true sources of the magnetic field the magnetic poles (magnetic charges) which are the real structural components of atoms and substance, were “buried alive”. Such theoretical discoveries as the curvature of four-dimensional space-time, explaining the physics of gravity, the big bang, the journey through “Black holes” in space and time, and many others, are well known. All these discoveries were formed without taking into account the existence of real magnetic poles (magnetic charges) since were based on the provisions of Maxwell’s flawed electromagnetic concept. The main reason which for more than 100 years inhibits the detection and recognition of real magnetic charges, are the special conditions of their confinement in a substance that are radically in the substance different from confinement of electrons. The results the experiments of F. Ehrenhaft, the present author and others in which of real magnetic charges were observed in the structures of atoms and substance prove that the existing concept of electric magnetism is deeply erroneous, and the fundamental change in physical priorities is the most important task today. Physical science, freed from vicious EM-concept of Maxwell and the accompanying relativism will offer humanity innovations in the form of practically useful physical effects and manifestations. This article presents 11 such innovations discovered by the author when embedded into the representations of real magnetic charges including, example, the electromagnetic (vortex) nature of the gravitational field, as well as the effects of Gravitational levitation and Intra-atomic gravitational shielding (IAGS). The first effect allows, for example, a person to go out into space without the use of jet thrust. The IAGS effect largely determines the physics of such fundamental manifestations as the chemical bonding, nuclear forces, and radioactivity.

**Keywords:** Magnetic Charges, Antielectrons, Magnetons, Antimagnetons, Mass, Negative Masses, Vortex Electromagnetic (Gravitational) Field, Paragravitation, Ferrogravitation, “Dark Energy”, Gravitational Shielding, Nuclear Forces

## 1. Introduction

The Great physicist James Maxwell in 1873 presented his vision of the nature of magnetism, which is written mathematically in the form of the equation

$$k \mathbf{J}_e = \text{rot} \mathbf{H}$$

where  $\mathbf{J}_e$  is the vector of the electron current density in the conductor,  $\text{rot} \mathbf{H}$  is the vortex magnetic field around the conductor,  $k$  is the coefficient of proportionality (Maxwell, 1873). It is easy to see that this equation, referred to as the first Maxwell equation, is a superficial mathematical “photo” of the famous Experience of Oersted. It is “thanks” to this superficial impression the Maxwell the real magnetic poles (magnetic charges), actually existing in atoms and substance were “buried alive”, and as direct sources of the magnetic field were declared moving electric charges. This vicious idea is known in physics as the electromagnetic concept or Maxwell’s electric magnetism. At the same time the physics of the very process of the formation of a magnetic field by moving electric poles, for example, electrons, has remained unknown since Maxwell’s time.

Amazingly, the latter circumstance did not bother anyone. This “little uncertainty” the theorists “have closed” using the concept of developed relativism which, as know, is of “the methodological principle consisting in the

metaphysical absolutization of relativity and conventionality of the content of knowledge". It is important to note that the speed of movement of electrons in the composition of the electric current in the conductor is only a few mm/sec.

The uncertainty with the Physics of the formation of magnetic field by the electric poles moving in conductor at speed of turtle untied the "hands" of high specialists in oblast mathematical physics whose achievements surpassed the wildest fantasies. Everyone knows: the curvature of four-dimensional space-time and the mutual attraction of bodies as an explanation of the phenomenon of gravity, the global expansion of the Universe, big bang, traveling through Black holes in space and time and many others. It is important to note that all these "discoveries" were made exclusively within the framework of mathematical physics one of the fundamental principles of which is Maxwell's vicious electric magnetism.

It is important to recall here that the mathematical apparatus, even the most perfect, when applied to physical processes, is just a language, a kind of "meat grinder", the exit of which is determined by the reliability or physical quality of "product" (of the physical conception) that laid into it. If as a physical "product" in such the "meat grinder" is laid the vicious conception of Maxwell, will always turn out: the curvature of four-dimensional space-time, the global expansion of the Universe, the big Bang and further as in of the known list.

However, there exists and extends its influence a conception that experimentally and theoretically explains the physics of the formation of a magnetic field during the movement of electric charges (Sizov, 2001; Sizov, 2015). The essence of this concept is that in atoms and substance as the structural components, there are real magnetic poles (magnetic charges) that emit a magnetic field in accordance with their magnetic nature, just as electric poles emit their electric field. In other words, magnetism and electricity are completely independent natural manifestations, which are determined by the fundamental physical nature of the corresponding particles. The number of magnetic charges in atoms and substance is comparable to the number of electric charges. The magnitude of the charge  $g$  of magnetic particles in the atomic shells corresponds to the condition  $e = g$  where  $e$  is the electron charge.

The problem with the detection and, therefore, recognition of magnetic charges is that these real particles exist in atoms and substance under the conditions of their rigid confinement which are fundamentally different from the confinement of electrons. It is also important to add that the conditions of confinement of magnetic charges in a substance become significantly tougher as the internal energy of the body grows, which is a serious obstacle for identifying and studying these real spinor particles in the high-energy mode (Sizov, 2017). According to the author's research, the possibilities for establish contact with individual magnetic poles increase as the internal energy of the body decreases, and such a state of substance as superconductivity is determined by the exit of a portion of magnetic charges to the real conduction band.

At the same time magnetic dipoles, in whose compositions magnetic poles exist, under the influence of the fields of moving electrons can rotate around electric current lines even in conditions their of limited mobility. In the process of such a rotation and the vortex magnetic field  $\text{rot}\mathbf{H}$  noted above is formed, and the equation of its formation process is written as  $k_2 \text{rot}\mathbf{J}_g = \text{rot}\mathbf{H}$ , where  $\text{rot}\mathbf{J}_g$  is the vortex (circular) motion of magnetic charges (the rotating magnetic dipoles). Thus, within the framework of the Oersted experiment and, respectively, the first Maxwell equation, two different physical processes are realized: 1)  $k_1 \mathbf{J}_e = \text{rot}\mathbf{J}_g$  и 2)  $k_2 \text{rot}\mathbf{J}_g = \text{rot}\mathbf{H}$ . The Great Physicist, in result of superficial impression from the Oersted Experience, combined these processes into one equation by equating first term of the first equation to the last member of the second.

In addition to magnetic charges, the special conditions of confinement in the substance have left behind the line of recognition and such real spinor particles as true antielectrons with charge  $e^+$ . Instead of actually existing antielectrons in atoms and substance, such theoretical surrogates as Dirac holes or electron vacancies were introduced into the physical theory (Dirac, 1930; Sizov, 2015a). It is also important to note that the existing physical theory, erroneously, uses a positron as the official antielectron. The author's research showed that a positron cannot be an antiparticle to an electron since is a kind of mass, i.e. has the atomic-like electromagnetic structure (Sizov, 2018). In his articles the author showed that the concept of the annihilation of the electron-positron pair is a large and highly harmful theoretical fallacy. The latter conclusion gives grounds for the establishment of such a natural manifestation as the Law of Conservation of Matter and Antimatter. It is important to emphasize that we are talking about the law of conservation of particles of Matter and Antimatter and the impossibility of their physical annihilation. A detailed explanation of this important statement is given below in section 4.10.

## 2. History of the Problem

The history of discovery and research of real magnetic charges is more than 100 years. The first person who

experimentally observed of magnetic charges was the remarkable Austrian physicist **Felix Ehrenhaft** who devoted more than 40 years of the detection and research these particles (Ehrenhaft, 1942). The results of his research allowed assert that magnetic charges are real components of substance. However based on the experiments of Ehrenhaft and his numerous followers, it was not possible to establish the exact physical parameters and the place of magnetic charges in the structures of substance. In 1968-1971 the author of this article, using magnetic neutron scattering, was able to obtain data indicating the possible participation of real magnetic charges in the compositions of atomic shells (Sizov, 1971). The subsequent experimental and theoretical studies allowed him to establish the physical parameters of magnetic charges, as well as determine their place in the structures of atoms and substance (Sizov, 2001; Sizov, 2015). The magnetic charges with a negative sign ( $g^-$ ), existing in the compositions of the atomic shells, received the author's name **magnetons**. Together with electrons and magnetons in the compositions of the atomic shells there are their antiparticles, i.e. **antielectrons** ( $e^+$ ) and **antimagnetons** ( $g^+$ ). Thus, the shells of atoms are electromagnetic, and not purely electronic, as is now commonly believed. Electromagnetic atomic shells, like the electromagnetic shells of nucleons, are sources of the corresponding gravitational fields, which are vortex electromagnetic fields. The electromagnetic nature of gravitational field, the concept of the world Physical Triad and the essence of "Dark energy", the real physics of nuclear forces and chemical bonding, as well as many others are the result of the author's research with the inclusion of real magnetic charges and true antielectrons into consideration (Sizov, 2015b; Sizov, 2018; Sizov, 2016a).

It is also important to emphasize that the real magnetic poles (magnetic charges), noted above, have nothing in common with the known Dirac monopoles (Dirac, 1931), and also do not participate in such physical manifestations as magnetricity (Giblin, Bramwell, Holdsworth, Prabhakaran, & Terry, 2011). All these recent theoretical constructions and manifestations for the formation of a magnetic field use electrons and their currents, i.e. are, in fact, electrified constructions, which by means of the "electric umbilical cord" are tied to the vicious electric magnetism of Maxwell.

### 3. Results

This chapter presents 11 new effects and manifestations that should complement the existing arsenal of physical concepts and practically useful technologies. However, this can happen only after world physical science masters the real magnetic charges in atoms and sends Maxwell's erroneous electrical magnetism to the archive of history.

#### 3.1 Electromagnetic Atomic-Like Device of Atoms, Nucleons, Positrons and Neutrinos (Sizov, 2018; Sizov, 2016a)

Detection and study of real magnetic charges, as well as true anti-electrons in the structures of substance, implies the realization in Nature of the electromagnetic device of atoms, nucleons, and others. Thus, the shells of atoms are exclusively electromagnetic, consisting of electric and magnetic charges, the magnitude of which meets the condition  $e = g$ . These charges exist in the compositions of the corresponding dipoles which rotate in atomic orbits. According to the author's research nucleons, i.e. protons and neutrons, as well as positrons and neutrinos, are atomic-like electromagnetic structures with electromagnetic shells and corresponding nuclei. Using the popular language nucleons can be called as small atoms, and a positron and neutrino, as very small atoms.

#### 3.2 The Electromagnetic Nature of the Gravitational Field (Sizov, 2015b; Sizov, 2016a)

The electromagnetic shells of atoms, nucleons, positrons, and possibly some others, are sources of the gravitational field which is a vortex electromagnetic field. An elementary source of the gravitational field is the electromagnetic quasi-particle, which received the author's name S-Graviton, where S is from the word "source". This quasiparticle is an "Assembly" of four real spinor particles, i.e. charged particles, which in the compositions of two coupled dipoles (electric and magnetic) rotate in antiphase in one atomic or nucleon orbit. The author's representation of S-graviton as an electromagnetic quasiparticle is not related to the representations of gravitons in the form of electromagnetic field quanta, which are often used in theoretical studies of gravity.

The equation formation of the gravitational field by S-Graviton is written in the form  $k \text{rot}[\mathbf{J}_e - \mathbf{J}_g] = \text{rot}[\mathbf{E} - \mathbf{H}]$ , where the expression  $\text{rot}[\mathbf{J}_e - \mathbf{J}_g]$  describes S-Graviton, and  $\text{rot}[\mathbf{E} - \mathbf{H}]$  defines the vortex electromagnetic (gravitational) field.

The gravitational field corresponding vector condition  $\langle \text{rot}[\mathbf{E} - \mathbf{H}] \rangle \neq 0$ , by analogy with the ferromagnetism, can called **ferrogravitational field** (FGF), and the field corresponding to the condition  $\langle \text{rot}[\mathbf{E} - \mathbf{H}] \rangle = 0$ , by analogy with the paramagnetism, can called **paragravitational field** (PGF).

#### 3.3 The Essence of Physical Mass (Sizov, 2015b; Sizov, 2008)

All varieties of Physical mass are electromagnetic structures of the atomic-like type consisting of electrical and

magnetic spinor particles, i.e. fundamental charged particles. Masses are, for example, substance, atoms, nucleons, positrons and neutrinos. The main characteristic property of all types of mass is the ability to emit a gravitational field which is formed as a result of the joint orbital currents of electric and magnetic charges and is of the vortex electromagnetic field. It must be emphasized here that Mass and, for example, Matter are completely different physical categories. As for individual spinor particles, both electric and magnetic, all of them are massless, since mass is the result of their joint "operation" in the framework of atomic-like electromagnetic structures. For example, an electron is a massless electrical particle and no, even "divine bosons", can give it a mass.

### *3.4 The Effect of Gravitational Levitation and the Physical Essence of "Negative Mass" (Sizov, 2015b; Sizov, 2008; Sizov, 2012; Sizov, 2013)*

The physical masses which emit the ferrogravitational fields will push off from masses-sources of the paragravitational fields, for example, from Earth. This last effect discovered by the author of the article called as the **effect Gravitational levitation**. It is important to note that the masses emitting ferrogravitational field and are so-called **negative masses**. The well-known representative of the "negative mass" is the atom of ordinary hydrogen or protium. Gravitational levitation is an extremely beneficial effect that can be used in various areas of human practice. One example of the application of this effect is the technology of exit in space without the use of jet thrust.

### *3.5 The World Physical Triad (Sizov, 2011/2012; Sizov, 2016c)*

The results research of real magnetic charges allowed the author to formulate the conception of the **World Physical Triad (PT)** according which the real World consists of three fundamental phases: of the **Matter**, **Antimatter** and **Energo-phase (Energo-medium)**.

The Phase of Matter is inhabited with magnetic and electric spinor particles with negative charge, and the Phase of Antimatter is formed by electric and magnetic particles with positive charge. Particles Antimatter constitute half all of real spinor particles, i.e. charged particles in real World, and their absence in the physical representations is determined by the conditions of their confinement in the atoms and substance which is radically different from the confinement, for example, of electrons.

The Energo-phase (Energo-medium), in the basic (undisturbed) state, is the isotropic high-density gas-like (possibly also quasi-fluid) medium formed by its own fundamental particles referred to as the **energions** which are spinless and massless. These particles are very small, they move in all directions at speeds close to the speed of light and can only be of two types: the Left and Right what linked with the appropriate direction of their own rotation. Super-high mobility and not-inertial behavior of the energions allow the particles and masses to move relatively freely in Energo-phase when this medium is in basic (undisturbed) state.

### *3.6 The Physical Nature of "Dark Energy" (Sizov, 2011/2012; Sizov, 2016c)*

According to the Physical Triad Concept all forces direct action on the particles and masses, which are implemented in the real World are the forces of the so-called "Dark energy" ("DE") which are determined by non-equilibrium states in the "Energo-phase" in the form of oblasts of local pressures  $P_\epsilon$  created by **energions** ( $\epsilon$ ). The formation of "Dark Energy" in Energo-phase is induced by spinor fields, i.e. fields of charged particles. All of spinor fields, including gravitational fields, do not have essential forces importance. They only play the role of the **intermediaries** exerting influence on state of Energo-phase and inducing formation of "Dark Energy" in it. Namely "Dark Energy" is real forces factor, performing the dynamics and the so-called interactions of masses and charged particles as in the scale of the Universe (the movement of galaxies, stars, planets and other objects) so and in the microcosm, for example, the dynamics of the spinor particles within a Physical masses of such as atoms, nucleons, etc.

### *3.7 The Physics of Diamagnetism and Electromagnetic Induction with Real Magnetic Charges (Sizov, 2016b)*

In addition to participating in structures of atomic shells, the magnetic charges exist in potential and even in real zones conduction of solids. The magnetic and electric spinor particles in atoms and substance exist in form such of the spinor associations as the magnetic and electric dipoles. Under influence of the external magnetic field, for example, in conductor being implemented polarization of magnetic dipoles. The internal field of magnetic dipoles is directed against an external magnetic field and is a simple explanation of such a physical manifestation as diamagnetism.

During the rotation of these dipoles in the conductor are formed of the vortex magnetic dipole fields, which and create an electromotive force, i.e. are responsible for the electromagnetic induction.

### 3.8 *The Effect of Magnetolectric Induction (Sizov, 2016b)*

The author proposed a new magnetolectric technology called magnetolectric induction (MEI) as a result of which the direct current of magnetic charges is created, but only in superconductors. The technical stages corresponding to the MEI are the magnetolectric analogs of the processes that make up the electromagnetic induction. The significant obstacle to obtaining the current of magnetic charges by the MEI method is the absence in Nature of a stable source of the vortex electric field  $\text{rot}\mathbf{E}$ , which is associated with differences in the physics of the retention of magnetic and electrical charges in substance. The latter field is an electrical analog of the vortex magnetic field described by the vortex vector  $\text{rot}\mathbf{H}$ .

### 3.9 *The Intra-Atomic Gravitational Shielding (Lensing) and Nuclear Forces (Sizov, 2019)*

The atomic shell and atomic nucleus are autonomous sources of gravitational field (GF). The gravitational fields emitted these sources, by its physical parameters, are different gravitational fields what associated with differences in the magnitudes charges of magnetic and electric particles in their compositions. The noted differences in the parameters of the GF are of reason that in atoms is realize the process of extrusion of foreign gravitational field from the region of given gravitational source. This effect should be called the **effect of intra-atomic gravitational shielding (IAGS)**. Within the framework of this effect the shell of the atom is kind of gravitational “insulator” that prevents the GF of the nucleons from leaving the beyond the atom. As result of the IAGS effect, the concentration PGF of nucleons is realized only in the region of the nucleus, which leads to an increase in nuclear forces.

### 3.10 *The Atomic-Shaped Device Positron and the Fallacy of Theoretical Concept Annihilation the Pair of the Particle-Antiparticle (Ehrenhaft, 1942)*

The author's studies have shown that the positron can't be antiparticle of electron, because it is type of mass, i.e. is of atomic-like electromagnetic structure. The true anti-electron sits in the structure of the positron as its nucleus. When an electron comes into contact with a positron, the electron combines with a true anti-electron, i.e. with the nucleus of the positron, with the formation of a tightly compressed spinor pair. The gamma quanta observed in the marked process are evidence of the destruction electromagnetic shell of the positron. It is important to note that in this process there is no annihilation of the electron and the antielectron. As a result of dense pressing of charges in the marked spinor pair, so-called is realized spin closure. In this case, the spinor pair does not manifest itself by spinor fields, and it turns out to be practically undetectable. Namely the superficial impression of the observed process of interaction of an electron with a positron and led to the introduction of the erroneous concept of their annihilation into the theory. The fallacy of the concept of annihilation of the particle-antiparticle pair allows us to raise the question of the implementation in Nature of the Law of Conservation of Matter and Antimatter particles. In this case, we are talking about the physical preservation of these particles and the impossibility as their annihilation so and mutual transformations, in principle.

### 3.11 *The Gravitational Chemistry (Sizov, 2019)*

The forces of gravitational "Dark energy" that is formed between the sources of PGF are responsible for almost all chemical bonding processes. Existing electronic theories of chemical bonding are theoretical surrogates which formed result of vicious situation that has developed in physical science, when out of four real spinor particles constituting atomic shells (two magnetic and two electrical) only one electron was taken into account.

It is important also to emphasize that electrons in atomic shell compositions are occupied solely by their intra-atomic obligations and, in principle, cannot participate in covalent and other models of chemical bonds. Instead of generally accepted electronic mechanisms of chemical bonding in real physics one should consider the mechanisms of interatomic bonding formed by means of the "Dark energy" forces and, above all, by the forces of the gravitational "Dark energy". The only electronic process that is realized in the physics of chemical bonding is the ionic bonding. However, and in this process the forces that bind the ions are of the forces of electrostatic "Dark energy". In the same time ions are sources of gravitational fields that induce between them of the gravitational "Dark energy".

## 4. Conclusion

Special conditions the confinement of magnetic charges in atoms and substance and, consequently, serious problems with their detection, played with physical science and, in particular, with the theory of magnetism, a very evil “joke”, which was realized in physics in the form of Maxwell's erroneous electrical magnetism. It is not difficult to foresee that the introduction of magnetic charges, as well as true anti-electrons into basic Physics

will result to grand transformation of theoretical representations and not only in physical science. Many theoretical concepts in related natural sciences such as chemistry, biophysics, and biology as well as will change significantly. It is particularly regrettable that in result of more than a century of ignoring these real particles in physical science, were approaches to the discovery of new beneficial effects were blocked what for a long time delayed their introduction into human practice. The scale of the damage that Maxwell's concept, over 145 years of its existence, has inflicted on physics, as well as applied sciences and technologies, has yet to be assessed.

### Acknowledgment

The author expresses deep gratitude to **Elena Sizova** and **Vitaly Sizov** who for many years helped and supported him, which largely contributed to the implementation of his research activities.

The author is grateful to the technical experts: **A. Davydov, N. Koshelev, A. Lomakin, E. Moiseenkov and S. Staritsin** who took an active part in conducting the main part experiments related to the detection and study of magnetic charges.

### Conflict of interests

The authors declare that there is no conflict of interests regarding the publication of this paper.

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