

Expression of Induced Electromotive Force and Verification Method of its Operation Principle (22)

- For a rational understanding of induced electromotive force -

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Abstract

1. The outer space is composed of two kinds of batangs -taes and pyeongs. When moving electrons pass through the outer space, pyeongs in outer space which are influenced by moving electrons (current) are displaced due to the vertical rotation, and the rotational displacement of pyeongs is expressed as the magnetic force of oriented function. Also, changes in the magnetic force generate an induced electromotive force in the vertical direction.

2. The induced electromotive force is made up of the displacement of pyeongs which has the function of an electric current. Therefore, the induced electromotive force should be referred to as space current. Also, electrons in the space current are forced to move as much as the displacement speed of the space current, and the movement of electrons is expressed as the action of the current. Here, the current and the magnetic force can permanently maintain the partnership of a cyclical system.

3. In the area where the space current of induced electromotive force is active, the propagation speed of light waves is influenced by certain changes. These changes in the light velocity can easily be verified by using an interferometer.

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I. Introduction

Like Faraday's "law of electromagnetic induction", changes in the magnetic field (magnetic force) generate an induced electromotive force in the vertical direction and free electrons are forcibly moved by the induced electromotive force. In addition, the movement of electrons has the function of an electric current and the magnetic field is expressed by the current of electrons in the vertical direction. The induced electromotive force under these conditions can be considered as a type of current. Here, the current and the magnetic field are functionally connected and maintain an interactive circulation system.

The functional connection between the current and the magnetic field in the vertical direction is specifically introduced in the previous thesis titled, "Expression of the magnetic force and verification method of its operation principle." Here, the current and the magnetic force maintain a partnership of mutual dependence, but the existing form of the current and the magnetic force is completely different.^[21]

<<http://batangs9.com/E-21.pdf>>

the outer space is composed of the distribution structure of "batangs" which has individual units of particle models. Also, batangs are classified into two components of "taes" and "pyeongs". In here, Taes and pyeongs of batangs are used as media in the propagation process of various energies. For example, electric force, magnetic force, and

light waves are delivered by using pyeongs of batangs as the medium. Also, neutrino, nuclear force, and gravity are delivered by using taes of batangs as the medium.^[6] <<http://batangs9.com/E-6.pdf>>

The form of light waves is composed of the combination of photocurrent and photomagnetic, and the photocurrent of light waves has the typicality of a particle model. Here, the process in which light waves are propagated at the speed of light (c) is led by the photocurrent. Also, the photomagnetic of the vertical rotation is temporarily expressed in outer space where the photocurrent of light waves pass through just like in Fleming's law. However, the photomagnetic of the vertical rotation which is expressed in outer space does not follow the photocurrent of light velocity, and it immediately vanishes after the photocurrent passes through. That is, the photomagnetic of light waves does not deviate from its original position.^[17] <<http://batangs9.com/E-17.pdf>>

Pyeongs of batangs which are used as the medium of the photocurrent during the propagation process of the photocurrent are displaced by being pushed as much as the volume of the photocurrent. Therefore, pyeongs in batangs are replaced to the advanced direction as much as the volume of the photocurrent, and the separation action (breakaway) of taes and pyeongs is done. Also, pyeongs of the separation process rotate vertically. That is, pyeongs in batangs have a displacement effect of vertical rotation.

When the photocurrent of light waves is propagated by using batangs in outer space as the medium, pyeongs in batangs have a separation effect (division) of advanced direction and a displacement effect of vertical rotation, simultaneously. Also, the distribution of pyeongs is biasedly concentrated through the rotational displacement of pyeongs, and the

biased concentration of pyeongs is expressed as the "magnetic force" of the oriented function. The magnetic force of these oriented function is expressed in individual units of batangs, and the rate of biased concentration of pyeongs determines the intensity of magnetic force.^[17]
<<http://batangs9.com/E-17.pdf>>

As described in the previously introduced thesis, "**The structure of elementary particles and their active function,**" all types of elementary particles infinitely repeat an autonomous vibration of contraction and expansion and perpetually maintain the system of autonomous vibration. That is, all elementary particles are not made up of hard solid like beans. Also, the vibrational energy of elementary particles acts at the speed of light by using batangs as the medium. Therefore, all elementary particles have the active function of light velocity which is currently in progressive state.^[7] <<http://batangs9.com/E-7.pdf>>

The outer space is filled with batangs of material bodies. Therefore, it is expected that batangs in outer space interfere with the movement of elementary particles. However, the mechanical system of vibrational energy which constitutes the form (concentration) of elementary particles is displaced (moved) by the interchange effect of medium by using batangs in outer space as the medium, and the movement of elementary particles must be controlled by the limit of light velocity. That is, elementary particles of autonomous vibration are not transferred in a form of transportation like the movement of a bullet.^[13]
<<http://batangs9.com/E-13.pdf>>

In the process wherein the vibrational energy of elementary particles is moved by using batangs in outer space, batangs of elementary particles are replaced with batangs in outer space as much as the motion distance. Also, if batangs of elementary particles are replaced,

the magnetic force (magnetic field) of vertical rotation is expressed (generated). That is, batangs (pyeongs) which are used as the medium of moving electrons have a magnetic force of vertically oriented function like the photomagnetic of light waves.

★ From a strict perspective, electric force and magnetic force do not have functional connection. That is, the electric force does not react with the magnetic force, and the magnetic force is not influenced by the electric force. Therefore, the electric force cannot functionally take part in the expression of magnetic force. Combining the electric force and the magnetic force of these conditions into one system is impossible. Therefore, the wave concept (wave model) of electromagnetic waves which has the concentrated structure of electric waves and magnetic waves should be discarded.^[8] <<http://batangs9.com/E-8.pdf>>

The movement of electrons has the function of an electric current, and the magnetic force is expressed by the current of electrons. Also, changes in the magnetic force induce the movement of electrons. Therefore, the expression of magnetic force is composed of the relative movement of batangs and electrons, and does not have a causative connection to the perspective of an observer. The movement velocity of these electrons should be expressed as the absolute values of batangs in outer space.

The basis of outer space which is composed of the medium of light waves has only one absolute coordinate system. In other words, the outer space is not composed of material vacuum, and the coordinate system of relative structure in outer space cannot be set. Therefore, all arguments in the theory of relativity and quantum physics which are made by assuming the space model in vacuum space must be modified.^[5] <<http://batangs9.com/E-5.pdf>>

In the body of the thesis, the causative connection between the magnetic field and the induced electromotive force will be specifically described. The conditions and the processes by which the induced electromotive force is expressed will also be explained. In addition, a method to verify the operation principle of induced electromotive force by using experimental tools will also be suggested.

II. Body

1. Causative connection between the outer space and the induced electromotive force.

A magnetic field (magnetic force) is generated around moving electrons (current), and the induced electromotive force is expressed by the changes in the magnetic field. That is, the characteristics of the magnetic field are expressed by the induced electromotive force. The expression of this induced electromotive force can be easily understood through "Faraday's law of electromagnetic induction." The law of electromagnetic induction is explained by the experimental tools in Figure 1.

In the experimental tools on Figure 1, 11 is the primary coil, 12 is the secondary coil, 13 is the direct current power source, 14 is the switch of circuit, and 15 is the galvanometer.

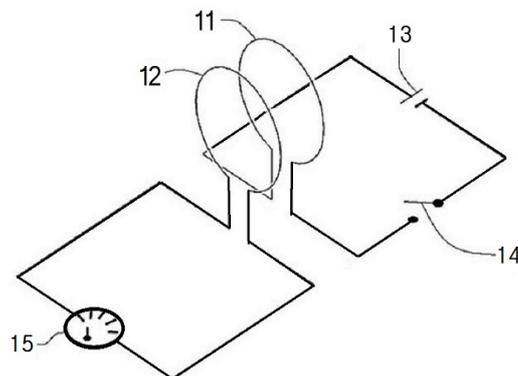


Figure 1. A perspective view of experimental tools to explain the law of electromagnetic induction

In the experimental tools on Figure 1, when the switch (14) of the circuit is connected, the current starts to flow to the wire of the primary coil (11), and the amount of the current gradually increases. Therefore, a variable magnetic force gradually increasing around the primary coil (11) is generated. In addition, the variable magnetic force of the primary coil (11) has an induced electromotive force, and the displacement current of the secondary coil (12) is expressed by the induced electromotive force. The current of these secondary coil (12) can be checked through the galvanometer (15).

Like the experimental tools on Figure 1, the effect by which the current is induced on the wire of the secondary coil refers that the free electrons in the secondary coil are compulsively moved. That is, the free electrons in the secondary coil are controlled by the induced electromotive force. However, if the amount of current that flows to the primary coil is stably maintained, the magnetic force of the first coil is not variably increased and the current on the wire of the secondary coil is not induced.

When the switch (14) of the circuit in the experimental tools on Figure 1 is blocked, the amount of current on the primary coil is gradually decreased, and the variable magnetic force of opposite direction is generated. Therefore, the current of opposite direction is induced on the wire of the secondary coil, and the current of opposite direction can be checked by the galvanometer.

In the area where the intensity of magnetic force is changed, pyeongs in outer space is biasedly concentrated and vertically rotated. Also, the induced electromagnetic force is expressed by the rotational displacement of pyeongs. Likewise, the induced electromagnetic force which is displaced to the vertical rotation has the function of an electric

current. In here, the induced electromagnetic force (rotational displacement of pyeongs) which has the function of electric current will be called "space current" for convenience.

The space current of induced electromotive force and the current of moving electrons have the same functions and are expressed in the same operation principle. For example, in the area where the space current of the induced electromotive force acts, the magnetic field (magnetic force) of the vertical rotation is generated like Fleming's law and the space current of the induced electromotive force and the magnetic field of rotational direction maintain a mutually dependent partnership.^[17]

[<http://batangs9.com/E-17.pdf>](http://batangs9.com/E-17.pdf)

The space current of induced electromotive force has a causality which is connected to the present progressive mode with respect to the magnetic force of the vertical direction. Also, the existence of free electrons is controlled by pyeongs (space system). This is because the vibrational energy constituting the autonomous vibration of free electrons exists by using pyeongs in outer space as a medium. Therefore, if free electrons exist in space current, free electrons must be forced to move as much as the displacement velocity of the space current.

The effect in which free electrons are forced to move by the space current of induced electromotive force can be easily and more clearly understood through the experimental tools in Figure 2.

In the experimental tools on Figure 2, 21 is the wire of the current, 22 is the coil of the wire with a linear section, 23 is the alternating current power source, 24 is the vacuum tube which is close to the linear section of the coil, 25 is the primary electrode in the vacuum tube, 26 is the secondary electrode, and 15 is the galvanometer.

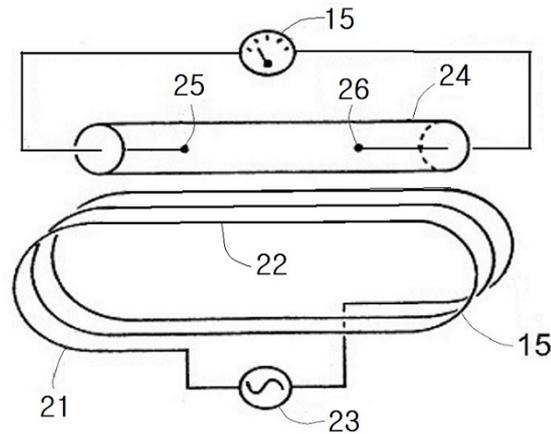


Figure 2. A perspective view of experimental tools to explain the relationship between induced electromotive force and free electrons.

Like the experimental tools in Figure 2, when the current of the alternating current flows to the wire of the coil (22), the space current of induced electromotive force is expressed around the coil (22) having a linear section. Also, free electrons of the primary electrode (25) move to the secondary electrode (26) in the vacuum tube (24) in which the space current of the induced electromotive force acts. However, when the direction of the current which flows to the wire of the coil (22) is changed, the free electrons of the secondary electrode (26) move to the primary electrode (25).

The movement of free electrons expressed in the vacuum tube (24) can be checked through the galvanometer (15). Also, millions of current watts generated by massive power plants are compulsively moved by the space current of induced electromotive force.

2. The experimental method to verify the operation principle of induced electromotive force.

The effect in which pyeongs of batangs are displaced like the space current of induced electromotive force can be verified through the

experimental tools of the electromotive force generator and laser interferometer. In here, the structure of the electromotive force generator has a perspective view and a cross sectional diagram as shown in Figure 3.

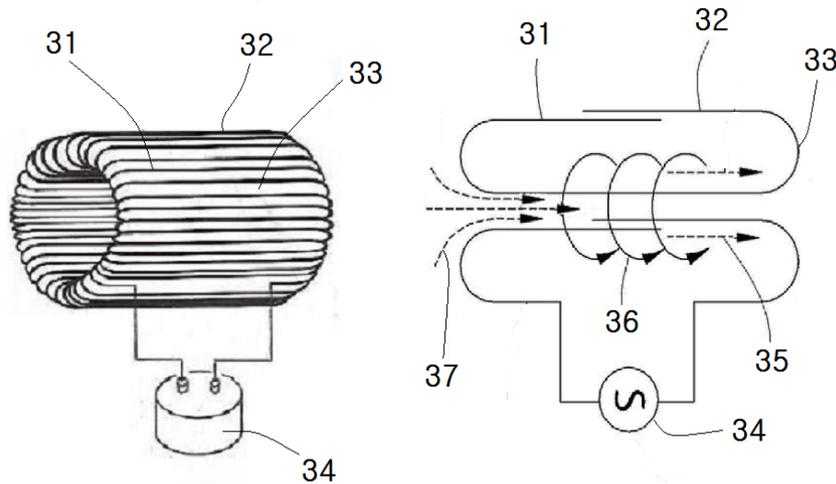


Figure 3. A perspective view and a cross-sectional diagram of an induced electromotive force generator configuration.

In the perspective view and cross sectional diagram on Figure 3, 31 is the wire of the current, 32 is the coil of the wire with a linear section, 33 is the cylindrical electromotive force generation in which the central line of coil (32) is turned to a circle, 34 is the power of the current, 35 is the advanced direction of the current, 36 is the magnetic force of the vertical rotation generated by the electromotive force generator (33), and 37 is the space current of induced electromotive force expressed by the magnetic force (36) of the rotational direction.

When the electromotive generator (33) is supplied with an alternating current as shown in the perspective view in Figure 3, the current of the coil (35) which flows to the right direction generates a magnetic force of the rotational function (36), and this magnetic force of the

rotational function (36) generates a space current of induced electromotive force (37) which flows to the right direction again. Therefore, the space current (37) and the current of the coil (34) always act in the same direction.

The space current of the induced electromotive force (37) and the current of the coil (35) are causally connected through the magnetic force of rotational function, respectively. Also, the space current of the electromotive force generator (37) and the current of the coil (35) maintain a proportional relationship. That is, the amount of the current supplied to the electromotive force generator determines the intensity and the displacement velocity of the space current. Therefore, the greater the amount of the current in the coil is, the higher the displacement velocity of the space current.

The photocurrent of all light waves is propagated by using pyeongs in outer space as a medium. Also, the distribution structure of pyeongs is displaced in the area where the space current of induced electromotive force acts. Therefore, when the photocurrent of light waves passes through the center of the electromotive force generator, the propagation velocity of light waves must be increased as much as the displacement velocity of the space current.^[17] <<http://batangs9.com/E-17.pdf>>

In the area where the space current of induced electromotive force is displaced to the present progressive state, the photocurrent of light waves must have a hyper light velocity (C^+) of $C + V$. Also, the hyper light velocity (C^+) of $C + V$ can be easily checked through the experimental tools in Figure 4. The experimental tools in Figure 4 are things that combine the laser interferometer and the electromotive force

generator (33) which is expressed in a cross-sectional view in Figure 3.

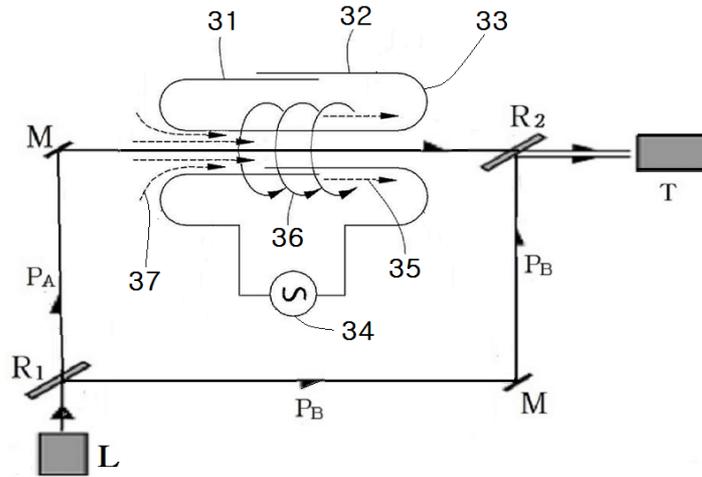


Figure 4. The experimental tools of the interferometer to verify the characteristics of induced electromotive force.

The electromotive force generator (33) which is applied in the experimental tools in Figure 4 is made up of the same forms as the cross-sectional diagram in Figure 3. In the structure of the laser interferometer, L is the light source of laser, R_1 is the first translucent mirror, R_2 is the second translucent mirror, M is the reflection mirror, T is the telescope of an observer, P_A is the path of the first light wave, and P_B is the path of the second light wave.

When the initial current flows to the electromotive force generator (33) in the experimental tools as shown in Figure 4, the amount of the current gradually increases and a space current (37) is generated at the center of the electromotive force generator (33). Here, when the displacement velocity of the space current is increased to the right direction, the light wave which is propagated to the right direction has a hyper light velocity of $C + V$ (C^+), and the light wave which is propagated to the left direction has a medium light velocity of $C - V$

(C^-) which is slower than the general light velocity.^[4]

<http://batangs9.com/E-4.pdf>

space current is not generated when a stable amount of the current supplied to the electromotive force generator (33) is maintained. The propagation velocity of light waves is not influenced by the changes in the center of this electromotive force generator. Therefore, the light wave in the right direction and the light wave in the left direction always have a light velocity of C . In addition, if the amount of the current of the power source (34) is small, the propagation velocity of the first light wave (P_A) is not influenced by the space current (37).

When the propagation velocity of the first light wave (P_A) which passes through the center of the electromotive force generator (33) is increased to the right direction and that of the second light wave (P_B) is not changed, it is possible to observe the interference fringes from the telescope (T) of an observer. The movement effect of these interference fringes proves that pyeongs in outer space are displaced to the right direction during the expression of space current (37). However, when the direction of the current supplied to the electromotive force generator (33) is changed to the opposite direction, the space current (37) is displaced to the left direction and the interference fringes of light waves move to the opposite direction.

When the alternating current type is used like in the experimental tools in Figure 4, the path of the current is periodically changed as much as the number of the frequency of the current and the effect in which the amount of the current is gradually changed is repeated. Therefore, the displacement velocity of the space current is periodically increased, and a clear observation on the form of the interference fringes cannot be done because the interference fringes of light waves

waver as much as the number of the frequency of the current.

III. Conclusion

The outer space is composed of taes and pyeongs. In addition, pyeongs in batangs are vertically rotated and the induced electromotive force is expressed by the rotational displacement of pyeongs in outer space where the intensity of the magnetic force is changed. Here, the rotational displacement of pyeongs has the function of an electric current. Therefore, the induced electromotive force is called space current. Also, the propagation velocity of the light waves which uses pyeongs as the medium is changed in the area where the space current of induced electromotive force is expressed.

★ All physical phenomena in outer space which is composed of batangs exist by using the characteristics of batangs. That is, the energy of all physical phenomena (gravitational force, electric force, magnetic force, nuclear force) is propagated by using batangs in outer space as the medium. Therefore, the functional characteristics of batangs must be applied during the analysis on the operation principles of all physical phenomena.

※ Request – If there is a progressive researcher who has a positive interest in the experimental method shown in Figure 1, please try it. I do not have accurate numerical data on the experiment above at present.

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* Difference becomes specialty, Ideal becomes reality,
at the center of world in the name of center

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