DISCOVERY

The effect of electric energy's generation based on electromagnetic induction of Faraday is discovered. Owing to usage of ferromagnetic and particular topology of magnetic field in the system it allows getting excess energy of magnetic field and transform it into useful electric energy in unrestricted quantities. Since 1831 year, when Michael Faraday opened the law of electromagnetic induction, no significant adding was done to it. Specifically, all magnetic fields of magnetic circuit were considered to be rigidly connected with wires as one system. For instance, it was considered that in the elementary case of ferromagnet magnetization, everything magnetic is linked with flow circuit, winding of magnetization. Though, already in the simplest case of magnetic circuit consisting of two or three ferromagnetic volumes divided by nonmagnetic gap, magnetic field may appear which do not form magnetic flux linkage with winding of magnetization, closed outside of circuit with flow.

In the theory of electrical engineering the activity of current source (electric energy) onto establishment of magnetic field is defined by the energy of magnetic field through convolutions of magnetizing coil plus dissipation in wires and iron. This work of current source is determined by formula:

$$A_p = \frac{\psi_\varkappa * I}{2}$$

I – current

$\psi_\varkappa$ - Magnetic flux linkage $\quad B_i * S * N_k$

A_p - Work onto magnetization

Finally, the work of current source, charges of electric energy onto establishment of magnetic field in magnetic circuit equal the energy of magnetic field through winding with current. Here, the energy of magnetic field of the system that is closed outside convolutions of magnetizing coil does not influence on the establishment of current in coil and does not demand charges of electric energy from current source (battery, generator and so on) for its creation. For example, if we magnetize iron (ferromagnetic) cake and place one more near, separating it by a small air-gap, here the second magnetic cake will also magnetize. But, apart from common magnetic field of cakes, around the second cake appears its own magnetic field, closed only around it and not taking part in magnetic interaction of two ferromagnetic objects. I have named this field as secondary. This field does not have any inductive connection with winding of magnetization on the first magnetic cake, and, what is most important does not demand any electric energy on its establishment from current source for magnetization. Secondary magnetic field possesses certain energy that can be transformed into useful electric energy. For that, during demagnetization (cutting off, decreasing of current in the coil on the first rod) on the second ferromagnetic capacity (rod, cake) a special demountable winding is set which connects to loading only during demagnetization (does not take part in magnetization). Thereby, all energy of secondary magnetic filed can be transformed into additional useful energy by cycle.

Quantity of iron (ferromagnetic) rods in magnetic circuit at definite conditions can be boundless. In some ferromagnetic medium magnetic interactions can be propagated onto infinity. For example, turn of domains in ferrodielectric, electromagnetic oscillations in powders form ferromagnetic.

In such systems the most part of magnetic field's energy of magnetic circuit does not have direct inductive connection with magnetization source. There exist enormous quantities of magnetic circuits in which secondary magnetic fields can be got, closed outside magnetization coils. This secondary magnetic energy can be used for generation of electric energy. There developed tens of devices for electric energy generation on pulse and alternating current including directly sinusoidal current on commercial frequency 50:60Hz. For this, ordinary iron transformer, wires and elements of power electronics is enough.

As an author, I have named this discovered physical effect of energy generation as Transgeneration of electric energy. The effect is brilliantly confirmed in the elementary experiments and was thoroughly studied in investigations on various ferromagnets and types of magnetic circuits.

At the present time international patenting of inventions on the basis of present effect is in process in many countries of the world. Not only is method of electric energy generation being patented but also a number of facilities on the basis of this method.

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In the view of theoretical physics present effect of generation is possible because of special quantum nature of ferromagnet. Magnetic field is formed by spins of electrons – magnet moments of electrons.

As distinct from ordinary currents in the wires spins of electrons absolutely do not react on so-called rotational electric field of Maxwell, establishing electromotive force of induction in wires under alteration of magnetic flow during magnetization of ferromagnets. Consequently, ferromagnet possesses so-called zero inductive impedance (resistance). During magnetization only magnetic field needs to be applied but not electric energy like in coils with electric current. Additional energy of magnetic field appears (generates) in magnetic systems with secondary magnetic field which can be easily transformed into additional useful electric energy in a pure form.

In the systems with secondary magnetic field also appears secondary electric field which together forms energy flux of Poynting vector directed inside ferromagnetic volume from surrounding physical continuum but not from wires of magnetization coil.

Transgeneration of electric energy allows generating pure electric energy from ferromagnets in unlimited quantity. Ferromagnet plays role of quantum electromagnetic pump getting electric energy from physical continuum and transforming it into electric energy at the expense of Faraday Effect.