Atomic Energy Level and Modulation of Light Waves(18)

- For an introspective examination of quantum physics and new advances -

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Abstract

1. Electrons absorb and emit light waves of light velocity at a stationary speed. Therefore, electrons are assumed to have an active function of light velocity. In addition, light waves of the particle model are emitted through the active function of electrons and is composed of 3 factors: light pressure, light energy quantity, and light matter quantity.

2. In a situation wherein the individual density(quantity) of light waves is high, such as inside a furnace, one electron can simultaneously absorb n numbers of light waves. Therefore, n numbers of light waves are combined into one light wave inside the electron. In this integration process, the light pressure of the light wave(frequency of wave concept) increases at the rate of n^2 and the wavelength decreases at the rate of $\frac{1}{n^2}$.

3. Due to the decreases in the wavelength of the integrated light wave at the rate of $\frac{1}{n^2}$, the atomic energy level of $E=R(1-\frac{1}{n^2})$ occurs. Also, the wavelength of the emitted light wave is enlarged as much as the wavelength of the divided light wave in the process of dividing the emitted light wave in two directions. Here, if the divided quantity of the light wave is assumed to be m, the wavelength of the emitted light wave is modulated in the form of $E=R(\frac{1}{m^2}-\frac{1}{n^2})$, and the divided quantity of the light wave

(m) determines the various types of spectrums(Lyman, Balmer, Paschen, Beackett).

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Sequence

※ For your reference – This paper denies some arguments of quantum mechanics, and suggests a new alternative. It is hoped the quantum mechanics of the abolition target will be excluded from the judgment standard.

Ⅰ. Introduction

Niels Bohr recognized that electrons of atoms have their own orbital layers(K, L, M, N..) during the implementation process of quantum physics. Also, light waves are emitted through electron transition in the orbital layers. However, the fundamental reason why the orbital layers of electrons is composed of multiple levels cannot be explained by rational logic.

Electrons absorb light waves of light velocity at a stationary speed and emit light waves of light velocity instantly. However, the absorption and emission process of light waves cannot be logically interpreted from the perspective of quantum physics which chooses the model of solid elementary particles.

As described in the previously introduced thesis “The Structure and

Active Functions of Elementary Particles," all types of elementary particles permanently maintain their "autonomous vibration" of contraction and expansion. In addition, the vibrational energy of elementary particles has a light velocity, and this acts as the progress of the present. Therefore, elementary particles(electrons) of autonomous vibration always absorb light waves of light velocity at a stationary speed or emit them instantly.[7] <http://batangs9.com/E-7.pdf>

All light waves have individual units(1,2,3..) of the particle model. Also, the individual quantity of light waves is inversely proportional to the square of the distance($\frac{1}{r^2}$). However, the individual components of light waves(energy quantity, wavelength, frequency) permanently maintain(keep) their original states, and are transmitted to the final boundary of space for billions of years.[1] <http://batangs9.com/E-1.pdf>

Light waves with long wavelengths are changed into light waves with short wavelengths in situations where the individual density(quantity) of light waves is high, such as inside a furnace or in a light bulb filament. However, the relationship between light wave(A) and light wave(B) does not work interactively. Therefore, it can be assumed that multiple light waves are integrated into one light wave inside electrons that have the function of receiving light waves.

The integration process in which light waves with long wavelengths are modulated into light waves with short wavelengths only takes place inside electrons that have the function of receiving light waves. That is, light waves cannot be synthesized outside electrons. For example, the external movement of electrons such as electron transition in orbital layers cannot take part in the modulation of light waves.[17]
<http://batangs9.com/E-7.pdf>

When electrons of autonomous vibration absorb multiple light waves simultaneously, multiple light waves are combined into one light wave.

This integration process acts as the causative function of the atomic energy level. Therefore, Niels Bohr's atomic model which premises on electron transition in orbital layers should be modified.

In the body of this paper, I will explain the working principle behind the modulation of wavelengths into shorter wavelengths. Also, the process in which the atomic energy level is expressed by the integrated modulation of light waves will be explained. Lastly, I will explain the reason why we need an alternative paradigm to escape the limitations of quantum physics.

Ⅱ. Body

1. Structural form of light waves

Elementary particles produce various energy fields(nuclear field, electric field, gravitational field) simultaneously, and respond to all energy fields with autonomous motion(basic interaction). Therefore, all elementary particles simultaneously have a function of producing an energy field and reacting to an energy field. It can be assumed that active energy always exists inside elementary particles. That is, all elementary particles do not have a hard, solid structure like beans.[7]

<http://batangs9.com/E-7.pdf>

All elementary particles permanently maintain their **"autonomous vibration"** of contraction and expansion. However, there is no additional barrier(container, vessel) and boundary to control the vibrational energy of elementary particles. Therefore, the volume(diameter) of elementary particles changes periodically as much as its frequency. Here, if we assume the light velocity of the vibrational energy as $3\times10^{8}\ m/\mathrm{sec}$, and the diameter of elementary particles as $10^{-15}\ m$, then the frequency of contraction and expansion has the size of $\frac{3\times10^{8}}{10^{-15}}=3\times10^{23}$.[8]

<http://batangs9.com/E-8.pdf>

Electron(A) of autonomous vibration infinitely produces the wave energy of the electric field. This wave energy only induces the autonomous motion(basic interaction) of another electron(B), and cannot be absorbed inside another electron(B). However, light waves of individual units which are emitted by electron(A) of autonomous vibration are absorbed(accommodate) inside another electron(B). Moreover, the vibrational energy of another electron(B) is additionally increased as much as the wave energy of the absorbed light wave. That is, the wave energy of the light wave does not induce the movement of electrons.

The light waves(photons) of the particle model emitted by electrons of autonomous vibration are composed of batangs(pyeongs). Also, batangs of light waved are transmitted as the elastic force of light velocity by using batangs in space as the medium. The light wave of this particle model consists of 3 components: **"light energy quantity", "light matter quantity",** and **"light pressure".**[17]

<http://batangs9.com/E-17.pdf>

The **"light energy quantity"** of light waves means the displacement of batangs. Also, the **"light pressure"** reflects the pressure force(energy density) of batangs, and the **"light matter quantity"** of light waves reflects the volume of batangs. In here, all types of light waves are distinguished by the difference in **"light pressure".** That is, various light waves such as infrared light, visible rays, ultraviolet rays, X rays, gamma rays, etc. have **"light pressure"** at different heights.

The light pressure of light waves has been replaced by the frequency of the wave concept in general physics. In other words, the frequency of light waves symbolically reflects the light pressure. Also, the light pressure of light waves is inversely proportional to the wavelength of the wave concept. However, the existence and the role of **"light matter quantity"** has not been recognized from the perspective of the wave

concept.

The light pressure(frequency of the wave concept) has various heights based on the type of light waves. However, the light matter quantity of light waves always maintains aconstant scale. For example, when the expansion energy of electron acts rapidly, only the light pressure of light waves increases, and the light matter quantity of light waves is always invariable. This is because the light matter quantity of light waves is determined by the stroke(expansion distance) of the expansion energy which is the diameter of the electron. That is, the light matter quantity of light waves reflects the diameter of the electron.[17]
<http://batangs9.com/E-17.pdf>

he operation principle in which electrons of autonomous vibration absorb light waves of the light velocity(C) at a stationary speed can be understood from the perspective of the resonance effect. In here, the vibrational energy of electrons and the wave energy of light waves are composed of the work energy with the same function, and have the same light velocity(C) in common. Therefore, they are compatible as equivalent values. That is, multiple light waves are combined into one light wave through the vibrational energy of electrons.

In the course by which the vibrational energy of light velocity and wave energy identically resonates, the wave energy of light waves is embraced(absorbed) inside the electrons. However, the wave energy of light waves which does not resonate with the vibrational energy of electrons penetrates or reflects the electrons of autonomous vibration.

2. Functional connectivity of electrons and light waves

As described in the previously introduced thesis **"The Structure and Functional Characteristics of Electromagnetic Waves,"** electrons of autonomous vibration freely absorb or emit light waves(photons) of the light velocity. Therefore, the body(independent component) of the absorbed

light waves is assumed to be equal or less than the diameter($10^{-15}\ m$) of electrons. If the body of light waves is wider than the diameter of electrons, electrons cannot absorb light waves.[17]

<http://batangs9.com/E-17.pdf>

Light waves emitted by electrons are composed of pyeongs of batangs and transmitted as the elastic force of light velocity. Also, the light waves of pyeongs which are transmitted at the speed of light have the function of **"light electric current"**. Around this **"light electric current"**, **"light magnetic"** with the vertical rotating direction simultaneously occurs just like in Fleming's law. Here, the dynamic function of **"light electric current"** and **"light magnetic"** is compared as equivalent values, and maintain mutual dependence. That is, the conversion process by which the action of **"light electric current"** is converted into **"light magnetic"**, and the process by which **"light magnetic"** is changed into **"light electric current"** takes place infinitely.

However, **"light electric current"** is representative of the particle model in the propagation process of light waves, and **"light magnetic"** with a vertical rotating direction takes part as an auxiliary function. In addition, the progress of light velocity(C) is done through the lead of **"light electric current"**, and light magnetic does not follow the light electric current. That is, the **"light electric current"** and the **"light magnetic"** of light waves formed one body, but they cannot be simultaneously propagated(behave).[17] <http://batangs9.com/E-17.pdf>

The bases in space have magnetic elements(components of magnetic force). Also, the magnetic elements in space take place as the effect of the light magnetic at the passing point of the light electric current. However, after the light electric current passes, the light magnetic in space is instantly destroyed. That is, the light magnetic in space instantly disappears at the passing point of the light electric current, and does not get out of its original position.[6]

<http://batangs9.com/E-6.pdf>

Electrons of autonomous vibration only absorb(or emit) the light electric current of light waves, and do not absorb the light magnetic. This is because the essence of the light magnetic is a simple sustainable function, and it is distributed over a large area. Also, the direction of the light electric current and the sustainable function of the light magnetic maintain a structure of a vertical intersection just like in Fleming's law.

When electrons of autonomous vibration absorb the light electric current(light wave) of the individual unit, the expansion energy and the contraction energy of the electrons change at different ratios respectively. Therefore, the characteristics of the electric force caused by the difference between the expansion energy and contraction energy are reduced and the orbital radius of the electrons is enlarged. However, the effect of the enlargement ofthe orbital radius of electrons(volume of atoms) is made on a very small scale.[8]

<http://batangs9.com/E-8.pdf>

Protons in the nucleus infinitely produce the wave energy of positive electric field, and electrons in the orbital radius always spins at a high speed for counterbalancing(neutralizing) the positive electric field. The rotation path of these electrons forms the orbital layer. Also, the electrons in the orbital layer have different rotation speed and environmental conditions based on the type of elements. Therefore, each type of element emits different light waves of light pressure (frequency).

When electrons in the orbital layer chemically bond or mutually collide, they emit light electric current(light wave) on an individual basis. Here, the light electric current emitted by the electrons in the orbital layer will be called "basic light wave" for convenience. The light

pressure of this “basic light wave” is determined by the rotational velocity(V) of electrons or the binding force of electrons to the protons in the nucleus. That is, the light pressure of the “basic light wave” reflects the rotational velocity of electrons.

The “basic light wave” is composed of pure light electric current. That is, the structure of “basic light wave” does not include the elements of magnetic force. Like this, the light wave without the light magnetic(photon) is called “basic light wave”. Here, the light waves emitted by the electrons of autonomous vibration have very small cross-section(diameter of electron). For example, all light electric current such as ultraviolet rays, visible rays, infrared rays, etc. are composed of tiny cross-sections smaller than the diameter of electrons($10^{-15}\ m$). However, the light magnetic of light waves has a very wide distribution range(area), and it cannot pass through a tunnel that isa thousand times bigger than the diameter of electrons.

In the process by which multiple light electric currents are combined into one light electric current through the electrons of autonomous vibration, the light electric current before the combination will be called “primary light wave” for convenience, and the light electric current after the combination will be called the “secondary light wave”. That is, the electrons of autonomous vibration absorb multiple primary light waves simultaneously, and emit one secondary light wave.

All components of light waves emitted by electrons of autonomous vibration areincreased at multiples of the “basic light wave”. For example, the light pressure of combined light electric current and the light energy quantity is changed once, twice, and thrice of the “basic light wave”. It is because light waves have individual units of the particle model.[17] <http://batangs9.com/E-17.pdf>

However, even if the light pressure of the secondary light electric

current and the light energy quantity are increased at multiples of the **"basic light wave"**, the light matter quantity always maintains the scale of the **"basic light wave"**. That is, all types of light electric currents such as ultraviolet rays, visible rays, infrared rays, etc. emitted by electrons of autonomous vibration have the same amount of light matter quantity. Also, the rest of the light matter quantity of the primary light wave which is not participated(included) in the light matter quantity of the secondary light wave is diffused into outer space.

3. Synthesis and modulation of light waves

The light pressure of all light electric current can be modulated in various sizes. The light pressure of light electric current is proportional to the light energy quantity and inversely proportional to the light matter quantity. This is because the light energy quantity of the light electric current is conserved(embraced) through the light matter quantity. For example, the lesser the light matter quantity is in the structure of the light electric current, the greater the light pressure which means the higher the density of energy is.

When n number of primary light waves(light electric current) are combined into one secondary light wave, the light energy quantity of the secondary light wave increases n times. However, the light matter quantity of the secondary light wave maintains the scale of the **"basic light wave"**. Therefore, the relative value of the light matter quantity in the structure of the secondary light wave decreases to $\frac{1}{n}$. That is, the ratio of the light matter quantity on the light energy quantity of the secondary light wave decreases to $\frac{1}{n}$, and the light matter quantity of $\frac{1}{n}$ embraces(conserves) all light energy quantity of the secondary light wave.

In the process by which multiple light waves are combined into one light wave, if we assume that each light energy quantity of the primary light wave is E_1, quantity of the primary light wave is n, light energy quantity of the secondary light wave is E_2, light matter quantity of the primary light wave is Q_1, light matter quantity(relative value) of the secondary light wave is Q_2, and light pressure of the basic light wave is P, then the light pressure Pu of the secondary light wave can be expressed in the following equation through sequential process.

$$Pu = \frac{E_2}{Q_2}$$

$$E_2 = E_1 \times n$$

$$Q_2 = Q_1 \times \frac{1}{n}$$

$$Pu = \frac{E_1 \times n}{Q_1 \times \frac{1}{n}}$$

$$Pu = \frac{E_1}{Q_1} \times n^2$$

$$\frac{E_1}{Q_1} = P$$

$$Pu = P \times n^2 \quad \cdots\cdots\cdots\cdots\cdots\cdots \quad (1)$$

When n number of the primary light wave are combined into one secondary light wave, the light pressure(Pu) of the light wave increases by the size of n^2 multiple on the light pressure(P) of the basic light wave. For example, if 3 light waves are combined into one secondary light wave, the light pressure(Pu) of the combined light wave increases at the ratio of $3^2 = 9$ times on the light pressure(P) of the basic light wave.

In general physics, the structure of light waves is known to have the wavelength and frequency of the wave concept. Here, the frequency and

the light wave of the wave concept are compared in the corresponding composition. That is, the frequency of light waves symbolically reflects the magnitude of the light pressure. Therefore, there is no sign of inconvenience in the process where the frequency of the wave concept is used as the substitute for light pressure.

If the frequency of the wave concept is rejected and the light pressure of light waves is used, the operating principle of various optical phenomena can be interpreted through rational logic. Here, the form of the formula derived from the perspective of the wave concept is not discarded but only the physical meaning of the formula is modified into a different condition.[17] <http://batangs9.com/E-17.pdf>

4. Mathematical expression of atomic energy levels and various types

Niels Bohr assumed an orbital layer of electrons(K, L, M, N..). He also recognized that light waves are emitted through electron transition in the orbital layers. The height of the orbital layer determines the frequency of the emitted light wave and the wavelength.

However, Niels Bohr's atomic model cannot be understood from the perspective of substantive structure. This is because the diameter of atoms cannot be reduced as much as the transition distance(height of fall) of the energy level. That is, the transition distance in the orbital layer which emits light waves and the diameter of atoms(volume) cannot be compared in corresponding composition. Therefore, the atomic model of Niels Bohr should be modified.

The probability of integration is high in situations where the individual density(quantity) of light waves is high such as in a furnace or in a light bulb filament. Also, light waves with long wavelengths are modulated into light waves with short wavelengths in the integration process of light waves. However, in situations where the individual density of light

waves is low, the probability of integration is not that high.

The vibrational energy of electrons which absorbs multiple light waves simultaneously additionally increases as much as the wave energy of the absorbed light waves, and has extra energy which is emitted in the form of light waves for the stable maintenance of autonomous vibration.[9] <http://batangs9.com/E-9.pdf>

In the integration process of light waves(light electric current), if the basic light wave is assumed to be S, the quantity of the basic light wave is n, the light pressure of the combined light wave is P, and the wavelength of the combined light wave is λ, their relationship could be expressed in the form of $S\times n\Rightarrow P\times n^2$, $S\times n\Rightarrow \lambda\times\frac{1}{n^2}$ as shown in equation(1). The wavelength of light waves refers to the distribution range of the light magnetic which is determined by the cohesive force of light waves. That is, the stronger the cohesive force of light waves is, the higher the light pressure and the narrower the distribution range(wavelength) of the light magnetic.[17] <http://batangs9.com/E-17.pdf>

In the process of division of light waves, if the quantity of the emitted light waves is n and the quantity of the divided light waves is m, the light pressure(frequency) of light waves can be expressed in the form of $Pu=R(n^2-m^2)$(R=proportional constant). Also, if the wavelength (distribution range of the light magnetic) of the basic light wave is assumed to be 1, the effect in which the wave length of the emitted light wave decreases at a ratio of $\frac{1}{n^2}$ can be expressed in the form of $E=R(1-\frac{1}{n^2})$.

The equation of $E=R(1-\frac{1}{n^2})$ shares the same structure with the atomic energy level derived by Niels Bohr. This logic means that the

perception on the atomic energy level is seriously distorted. That is, the electron transition in the orbital layer provided by Niels Bohr is a misinterpretation(delusion) of the integration process of emitted light waves.

Parts of the light waves emitted by electrons of autonomous vibration can be lost or stolen by surrounding electrons. Therefore, the light pressure of the emitted light waves decreases as much as the light pressure of light waves. Also, in the process by which the light waves in the emission process is divided(separated) into two directions, it is reduced as much as the light pressure of the divided light wave. Here, the wavelength of the emitted light waves is expressed in the form of $E=R(\frac{1}{m^2}-\frac{1}{n^2})(\frac{1}{m^2}>\frac{1}{n^2})$.

The quantity(m) of the divided light wave which composes the equation of $E=R(\frac{1}{m^2}-\frac{1}{n^2})$ determines the type of spectrums. For example, Lyman-type ultraviolet rays are produced by the $m=1$ of the divided light waves, Balmer-type visible rays are produced by the $m=2$ of the divided light waves, Paschen-type infrared rays are produced by the $m=3$ of the divided light waves, and Beckett-type effect is made by the $m=4$ of the divided light waves.

Ⅲ. Conclusion

The structure of light waves(photoelectric current) emitted by electrons of autonomous vibration is composed of individual units of the particle model. Also, one electron can simultaneously absorb n numbers of light waves in a situation where individual density(quantity) of light waves is high, such as inside a furnace. Therefore, n numbers of light waves are combined into one light wave inside electrons. During this integration process, the light pressure increases at the rate of n^2 and the

wavelength decreases at the rate of $\frac{1}{n^2}$.

The effect in which the wavelength of light waves decreases acts as the causative function of the atomic energy level. Also, when the emitted light waves are divided into two directions, the wavelength of the emitted light waves are enlarged as much as that of the divided light waves. Here, the wavelength of the divided light waves determines various types(Lyman, Balmer, Paschen, Beackett) of spectrums.

During the emission process of light waves, the orbital layer of the electron does not transfer(fall). Also, the atomic energy level takes place due to the integrated modulation of light waves. Therefore, Niels Bohr's atomic model which premises on the wave concept of light waves and the electron transition in the orbital layers should be modified.

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

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