Engineering and Technology Journal e-ISSN: 2456-3358

Volume 10 Issue 02 February-2025, Page No.- 3886-3899

DOI: 10.47191/etj/v10i02.18, I.F. – 8.482

Mass and Radius of a Fabriton Particle

Sabir Sadiq

Kurdistan Space Agency, Shiladoze, Kurdistan

ABSTRACT: In this research work, the mass and radius of a fabriton particle could be determined, and confirm that the subatomic particles and tremendous numbers of fabriton particles precisely fill the structure of atoms. Atom is not a vacuum ball as a whole. Protons and neutrons vibrate quickly beside one another in the nuclei of an atom, and electron particles orbit them on the outer edge. Fabriton particles have been distributed widely in the space of an atom, typically in the vacuum between subatomic particles to hold them gravitationally. An Atomic fabric could be distorted and evacuated by the rapid oscillation of protons and neutrons in the core of an atom, as a result, the tunnel vacuum, ripples, and gravitational tunnel waves produced continuously in the heart and outer shells of an atom to attract and repulse electron particles in different orbitals, and increase the stability of atoms. Quantum entanglement appears among subatomic particles by electromagnetic lines of subatomic particles and gravitational tunnel waves. The gravitational tunnel waves and electromagnetic spectrum can pass and distribute rapidly through the entire structure of an atom and the visible universe. The electromagnetic field appears during the continuous vibration of subatomic particles and charges. Furthermore, the gravitational field, gravitational force, and powerful gravitational waves could be formed from temporary distortions and gravitational tunnel waves that are appeared by an effect of mass, pressure, energy, and transition of subatomic particles and celestial objects through the dark fabric matter and energy of fabriton particles that existed in the structure of atoms and Universe.

KEYWORDS: Main Properties of Fabriton Particles; Atomic Structure; Rigid Atom; Atomic Fabric Effect; Atomic Fabric Waves.

1. INTRODUCTION

An atom is a tiny part of matter that distributed widely in the fabric of cosmos, and it completes a small fraction of vacuum in universe. Scientists thought the atoms were the smallest piece of matter in many decades. The atom is the main building block of matter and energy for entire compound materials and celestial objects. The stars, planets, galaxies, and the whole visible universe are built up by atoms and molecules. Fabriton particles are tiny particles of dark matter that have been distributed steeply in the structure of atoms, compound materials, and celestial objects to prevent atoms and the entire visible universe from evaporation and annihilation. The concept of an atom started and developed during multiple theories and models of an atom have been discussed and developed by scientists and philosophers. The word atom is derived originally from an older civilization of the world the ancient Greek word named Atomos, which means "uncuttable" or un division, but the modern atomic model or new theory of an atom is not based on the ancient concepts of philosophers [1]. An ancient concept of an atom is required to additional corrections and confirmation. In the early 19th century, the English scientist that called a John Dalton was confirmed that the chemical substances seemed to react and combine with each other, and he decided to use the word atom to refer to these substances of matter [2][3]. During the 17th century, Robert Boyle a chemist and physicist scientist successfully improved the concept of chemical elements as substances different from a compound material [4]. Since the 18th century, Antoine Lavoisier showed that compounds consist of elements, which scientists could not decompose into simpler substances by experimentation, he showed that water molecule can be decomposed into hydrogen atoms and oxygen atom, and also defined the law of conservation of mass [5]. Chemical elements have been arranged in the periodic table into two groups column groups, and row groups [6]. Lightweight atoms, such as hydrogen and helium, are at the top of a periodic table, and heavy atoms, such as uranium are found at the bottom of that table. In 1917 Rutherford observed hydrogen ions emitted from the nitrogen gas bombarded with alpha particles [7]. The proton or charge number which is called the atomic number of chemical elements that has been argued among the scientific community since 1923 to distinguish the quality of chemical elements [8]. Dalton disliked the word "molecule", Avogadro used the word "molecule" in his study, avoiding the word "atom", instead using the term "elementary molecule" [9]. Jacob Berzelius used the term "organic atoms" because he thought this only existed in the organic compounds. Furthermore, Jean-Baptiste Dumas used the terms "physical atoms" a particle that cannot be divided by temperature and pressure, and "chemical atoms" was a particle that could not be subdivided easily by chemical reactions [10]. In 1874, Jacobus Hoff suggested that the carbon atom bonds to other atoms in a

tetrahedral arrangement, for example, pentane (C_5H_{12}) consists of 5 atoms of carbon bonded with 12 hydrogen atoms [11]. Albert Einstein independently reinvented and improved Gibbs' laws, since 20th century [12]. All statistical mechanics and the laws of heat, gas, and entropy require the existence of atoms [13]. Scientists proposed that Atoms were thought to be the smallest possible division of ordinary matter until 1899 when an experimental scientist who named Thomson discovered the electron particle experimentally through his work on the cathode rays [14]. In 1899, Thomson detected negative electricity created by ultraviolet radiation landing directly on the surface of metals. The emission of electron particles from the surface of metals illuminated by high-frequency light is known now as the photoelectric effect [15]. Dark fabric matter and energy mostly consist of fabriton particles that called dark matter particles. An empty inside of entire atoms, and the visible universe should be filled with dark fabric matter and energy.

Main objective of this study to calculate the mass, radius, and density of a fabriton particle and compare its properties and its interactions with subatomic particles.

2. FABRITON PARTICLE PROPERTIES

Fabriton particles are dark matter particles and are abundant in nature abundantly. Dark matter and dark energy constitute approximately 95% of the total observable Universe, and their physical nature remains a mystery [16]. Fabriton particle is a natural particle that appeared and existed in nature before a Big Bang event, and during the formation and evolution of the entire visible universe, celestial objects, stars, planets, atoms, and living creatures. It acts directly on the evolution of objects and is the main reason for the formation and evolution of total creatures and celestial objects. Fabriton particles have been distributed in the structure of an atom to hold electrons with the nucleus of an atom gravitationally. The total structure of an atom is not empty entirely, it is completed by a dark matter particle called a fabriton particle. The location between the nucleus of an atom and electrons could be filled with several fabriton particles to increase the stability of an atom gravitationally. However, electron and proton are two electrical charges that are held together by electromagnetic force but not high enough to hold them together by only electromagnetic force. A proton has a positive charge, it is stabilized in the heart of an atom and its mass is much higher than the mass of an electron, an electron particle has a negative charge which orbits the nucleus of an atom in the edge of an atom. The neutron is a neutral charge particle resident at the centre of an atom beside proton particles. The mass and radius of a fabriton particle are much lower than the mass and radius of subatomic particles. The strong nuclear force is holding whole protons and neutrons together strongly in the core of an atom. Fabriton particles are held together gravitationally as a fabric called a dark fabric matter and energy. Protons and neutrons in the heart of an atom oscillate quickly with one another to build up a tunnel vacuum in the core of an atom where fabriton particles are distorted and fluctuate around them as a tornado eye. The protons and neutrons have higher energy to push on fabriton particles to be shifted away into the outside of the nucleus of an atom. Subatomic particles have powerful binding energy capable of making pure tunnels in the dark fabric matter of an atom. Dark fabric matter could be distributed in the entire structure of an atom and visible universe to save the general balance of the universe and atomic particles. Fabriton particles widely participated in the formation of an atom and give it an additional mass, force, and energy to be combined tightly and stabilised dynamically. The fabriton particles have amazing properties as subatomic particles.

2.1 Mass of Fabriton Particle

Mass of fabriton particle incredibly low and simple as compared to another particles and molecules in the nature. Mass of fabriton particle much smaller than the mass of subatomic particles millions and billions of times. Subatomic particles are formed in the time of compacted Universe when space and time distorted and curved steeply. Fabriton particle is a normal particle which appeared in the space before a big bang singularity, Universe expansion, inflation, and the evolution of total celestial objects. Fabriton particles are distributed in the space of an infinity to hold tightly the total parallel Universes and our visible Universe. Mass of fabriton particle maybe smaller than the mass of atoms, subatomic particles and much higher than the mass of photon particles. Fabriton particles are holding together gravitationally as a homogeneous fabric to impose additional mass, energy, and stability for celestial objects. Photon particles and subatomic particles may need to additional energy to build up temporary tunnel vacuum in the dark fabric matter and energy to travel throughout it. The mass and power of fabriton particles are delivered during the direct collection and combination of huge numbers of fabriton particles together in single point. Fabriton particles are holding together in small area around a black hole singularity to make a compacted sphere of an event horizon around the singularity ball.

The density of fabriton particles and dark fabric matter and energy are incredibly high in the event horizon region even light particles can't pass throughout it easily. Light particles have enough ability to move in free space of Visible universe easily because the density of dark matter particles and dark fabric matter are lower and limited. Huge numbers of fabriton particles are squeezed in the event horizon of a black hole, and obstacle the photon particles to escape directly from the capture of a black hole. Fortunately, minimum numbers of fabriton particles are distributed in the space that located among stars and galaxy, and permit radiation particles to travel in the whole dimensions of a Universe easily. The electronic kilogram project of NIST is an important project that precisely improved the watt balance method to obtain a new determination of the Planck constant h and electron mass [17]. The mass of fabriton particle

incredibly small. Mass of fabriton particle ten billion times lower than the mass of an electron particle. Mass of an electron particle estimated to be ($M_{Elecroton\ particle} = 9.109\ x\ 10^{-31}\ kilograms$). The Mass of fabriton particle lower than the mass of an electron particle about 10,000 million times, and estimated to be ($M_{Fabriton\ particle} = 9.109\ x\ 10^{-41}\ Kg$). Mass of a fabriton particle smaller than the mass of subatomic particles and greater than mass of photon particles.

2.2 The Radius of a Fabriton Particle

The size of an atom and remnant vacuum among subatomic particles homogeneously had been filled by subatomic particles partially, and fabriton particles generally. In 1920, scientists were able to determine the sizes of atoms by using X-ray crystallography in laboratories [18] [19]. However, the charges, mass, radius of atoms and subatomic particles were measured precisely by an effort of experimental and theoretical scientists, but they still believed that an atom is mostly a vacuum ball, and said only filled by subatomic particles or contained such particles, the protons, neutrons, electrons, and quarks. I worked hard in this scientific work to confirm that the sphere of an atom and its vacuum not only filled by subatomic particles, or an atom is not a vacuum ball 99%, its remnant vacuum has been completed by fabriton particles to keep subatomic particles held to one another and make an atom to be more stable dynamically. The radii of atoms range between 30 and 300 pm (pm means trillionths of a meter). The radius of an atom is more than 10,000 times the radius of its nucleus (1–10 fm), and less than 1/1000 of the wavelengths of visible light (400 –700 nm) [20]. The atomic radius is the distance from the nucleus's center to the outermost isolated electron at the edge of the atom. The atom has spherical or elliptical shape according to arrangement of particles in the structure of an atom. The mass and Radius of a fabriton particle are big challenges in the history of cosmology and physics. Fabriton particles are dark matter particles existed widely in the nature as subatomic particles, and effected on the formation and evolution of atoms and celestial objects, and prevent them from evaporation. It is given to atoms and visible Universe an additional mass and size. Fabriton particle occupied tiny size in the space and completed the free space in the structure of atoms and celestial objects. It is acting directly on the formation and evolution of atoms, celestial objects, galaxies, stellar system, and binding them gravitationally.

The space between protons, neutrons and electrons is filled homogeneously by dark fabric matter and energy to save the dynamical balance of whole atoms. Fabriton particles are distributed widely in the structure of atoms and holding total subatomic particles gravitationally. The mass and radius of fabriton particles are critically low, but their abundant widely and their distribution homogenously in the vacuum of atoms may prevent atom from evaporation and annihilation. Strong nuclear force, weak nuclear force, and an electromagnetic force are not high enough to keep atom stable and homogeneous. The fabriton particles are holding subatomic particles gravitationally during a bridge that built up as a dark fabric matter and energy among total electrons, protons, and neutrons in the structure of any atoms and molecules. The radius of fabriton particles incredibly small as compared to the radius and size of subatomic particles, but most of vacuum in the atom is filled and replaced by fabriton particles, they have been distributed in three dimensions in the total structure of any atoms. The radius of fabriton particle higher than the radius of photon particle and lower than the radius of subatomic particles. The radius of a fabriton particle ten thousand million times smaller than the radius of an atom. The radius of fabriton particle thousands of times smaller than the radius of an electron particle. The radius of a fabriton particle estimated to be a 1 zeptometre ($R_{Fabriton\ Particle} \leq 10^{-21}$ m).

2.3 The Density of a Fabriton Particle

The mass, and Radius of a fabriton particle could be lower than those of subatomic particles of an atom. The fabriton particle is a point particle and its density may be lower or higher than the density of subatomic particles according to its radius and size. The radius of a fabriton particle is ten thousand million times smaller than the radius of an atom, and the mass of a fabriton particle is ten thousand million times lower than the mass of an electron particle. As a result, the dark fabric matter of fabriton particles could be distorted and turbulent around the nuclei of an atom. Protons and neutrons have higher mass and density than the fabriton particles, so both reside at the centre of an atom. An elementary particle called an electron has lower mass than protons and neutrons, so it orbits the nuclei of an atom at the outer edge. Protons and neutrons are held together strongly at the heart of an atom, vibrating together rapidly to build up a tunnel vacuum at the heart of an atom, and attracting an electron particle continuously to fall into the tunnel vacuum at the core of an atom. The turbulent called repulsion force appears during rapid vibrations of an atomic nucleus that is expelled by an electron particle to stay away from any possible collisions with the core of an atom. The Mass of a fabriton particle lower than the mass of subatomic particles, and its radius much smaller than the radius of subatomic particles 1000 or millions of times. Fabriton particle has a perfect spherical shape like a football. The density of a fabriton particle is estimated to be higher than the density of atoms, ordinary matter, and chemical compounds, and competes with the density of subatomic particles. The radius of a Fabriton particle ($r = 10^{-21}\ m$), and its mass ($m = 9.109\ x\ 10^{-41}\ kg$), and its density maybe ($\rho = 2.176\ x\ 10^{22}\ \frac{kg}{m^3}$). The mass and radius of a fabriton particle are very low, but its density is much higher than our belief. Fabriton particle is an energetic particle and affords the stress of celestial objects and black holes. Fabriton particles are combined and compacted together in critical conditions of density and pressure under the higher stress of the black holes

to trap and accumulate photon particles and build up the dark sphere of an event horizon around the black hole singularity. The density of dark fabric matter inside the structure of an atom is not high enough to prevent the motion of photon particles or accumulate them for longer time. Light particles can pass inside the fabric of an atom and fail to penetrate easily through the compacted fabric of fabriton particles in the event horizon of a black hole. Fabriton particles could be distorted and squeezed into critical density around the black hole singularity, even light can't escape or leave through the violent gravitational field of a black hole easily.

2.4 Fabriton Particles Speed

Fabriton particle is a tiny and an energetic particle, it is moving quickly to complete the remnant vacuum of a Universe and atoms. The Fabriton particle has the greatest velocity to capture the space of the Universe and keep an atom and the whole Universe statically and dynamically balanced. The huge numbers of fabriton particles are combined and tightened together strongly to make a Dark fabric matter and energy. Dark fabric matter consists of infinite numbers of fabriton particles and holds together gravitationally to save the Universe and atoms homogeneously and cohesively. Subatomic particles in the structure of an atom those vibrating and held together by four fundamental forces of Nature. An electron particle orbits the nuclei of an atom in the outer edge of an atom. A temporary tunnel vacuum could be produced from the rapid transition of an electron particle inside dark fabric matter and energy. The mass and binding energy of fabriton particles in the structure of dark fabric matter is not high enough to obstacle the motion of subatomic particles. The speed of fabriton particles is incredibly high enough to replace the temporary tunnel vacuum that formed from the instant travel of electron particles. The radius of a fabriton particle is thousands of times smaller than the radius of an electron particle, and the mass of the electron particle is 10 billion times greater than the mass of fabriton particles. The mass, radius, energy, and momentum of subatomic particles are high enough to break up the atomic fabric of fabriton particles. An electron particle can pass through the dark fabric of fabriton particles easily and rapidly. Electron particles move quickly through the dark fabric matter of an atom and tide one another by turbulent forces. The turbulent forces of electron particles could be formed from the direct interaction and transition of several electron particles inside the structure of an atom and molecules. Protons and neutrons have strong nuclear force holding them together tightly and vibrating quickly beside one another in the heart of an atom. The Larges tunnel vacuum and powerful turbulent force may be produced from rapid oscillations of the nucleons in the core of an atom. The tunnel vacuum in the heart of an atom pulls inward the electron particles continuously, and turbulent waves may accelerate electron particles to stay on the outer edge of an atom inversely. The dynamic and static balance between atomic nuclei and electrons kept an atom, molecules, and compound materials from evaporation. The tunnel vacuum effect and the turbulent waves that formed from direct interaction and transition of electrons, protons, and neutrons in the homogeneous fabric of an atom held subatomic particles in a perfect balance and cohesive. The fabriton particles vibrate and travel rapidly and continuously to capture and fill the minimum and maximum free remnant vacuum that appeared among subatomic particles, atoms, celestial objects, galaxies, and the whole size of the Universe, to keep entire things in balance and contact forever.

3. ATOMIC STRUCTURE

The structure of an atom is still an illusion in atomic theory and atomic models. Scientists believe that an atomic particle consists of protons and neutrons held together by a strong nuclear force in the centre of an atom, and electron particle orbits the nucleus of an atom in an external boundary of an atom. The model of an atom as a central nucleus of neutrons and protons surrounded by outer shells of energetic electrons [21]. Protons, neutrons, electrons, quarks, and fabritons are the main building blocks of any type of atom. According to free particle model in quantum mechanics, the Free particle is one particle that does not interact with other particle or fields directly [22]. Zitterbewegung is predicted definitely to exist for both free and bound electrons [23]. Where did matter in the universe and the mass of matter come from? [24]. Matter has four states solid, liquid, gaseous, and plasma. All states of matter and all types of atoms consist of electrons, protons, neutrons, and fabritons. Low-mass atoms the hydrogen atom, and high-mass atoms as Uranium contained protons, neutrons, electrons, and fabritons.

The hydrogen atom consists of a single proton, and one neutron resident in the heart of an atom, with an electron particle orbiting the nuclei of a hydrogen atom. The mass and radius of the fabriton particles are incredibly low, as a result, the hydrogen atom needs trillions of fabriton particles to fill it. The Heavy nuclei atoms or the light nuclei atoms contain gigantic numbers of fabriton particles to keep them in balance and cohesively. Fabriton particles have been distributed widely in the structure of an atom to prevent it from evaporation, and annihilation. Fabriton particles may keep subatomic particles of an atom to be cohesive and homogeneous. An electron particle is a negative charge particle, and the Proton is a positive charge particle. Subatomic particles with the same charges have repulsion force, and particles with different charges could be attracted to one another. The attraction and repulsion forces among subatomic particles of any atom are organized by the fabriton particles that are distributed in the fabric of an atom. Fabriton particles in the structure of an atom keep negative electrons in powerful gravitational binding. Protons and neutrons may be immersed deeply in the heart of an atom, and electrons are orbiting them in the orbital of an atom by gravitational force and electromagnetic forces. Both protons and neutrons vibrate rapidly in the heart of an atom to attract and repulse

electron particles into the large tunnel vacuum that appears in the nuclei of an atom. The strong nuclear force that appears in the nucleus of an atom and the electric force of charges prevailed over the gravitational force. The gravitational force appears among subatomic particles with different masses during gravitational tunnel waves and turbulences that are formed during rapid interaction and transition of particles in the dark fabric matter of atoms, and an electromagnetic force appears among charges of atoms when electromagnetic lines are mixed and linked among them closely. The hydrogen atom has a single electron particle that orbits its nuclei in the lower and higher orbitals of an atom according to absorbed and released energy, but the massive atoms have great numbers of protons and neutrons held together in the nuclei, and several numbers of negative electron particles orbit the nuclei of such heavy atoms in much numbers of turbulent orbitals. The mass number and atomic number of atoms could be changeable according to the number of protons and neutrons that are distributed precisely in the nuclei of an atom.

4. HYDROGEN ATOM

Hydrogen atom has minimum number of subatomic particles. Scientists expected Hydrogen be the first atom created after the big bang, because most cosmic clouds the nebulae contained hydrogen molecules and helium atoms perspective to be 90%. The nebulae are place where stars started to be formed here. The nebula is the dust and gaseous clouds where stars and planets are started to be formed here and developed. Hydrogen is a tiny atom; the ground state energy of hydrogen atom is about (−13.6 eV). The ground state is the lowest energy state according to a quantum mechanics [25]. The hydrogen atom is a light-mass atom consisting of a single electron, proton, neutron and huge numbers of fabriton particles participated in its formation and stabilization. Atomic number of a hydrogen atom (Z=1). The nucleus of a hydrogen atom contains a single positively charged proton ($q_1 = +1.6\,x\,10^{-19}\,Coulombs$), and a Neutron has a neutral electric charge which neither negative nor positive. Only single negatively charged electron ($q_2 = -1.6\,x\,10^{-19}\,coulombs$) bounds to the nucleus of an atom electrically by the Coulomb's force F_e that called an electric force, and it maybe tighten with atomic nucleus gravitationally by gravitational force F_g, and gravitational potential energy:

$$F_g = \boldsymbol{G}\frac{\boldsymbol{Mm}}{\boldsymbol{r^2}} \qquad \textbf{(1)}$$

$$\boldsymbol{F_e} = \boldsymbol{K}\frac{q_1\,q_2}{\boldsymbol{r^2}} \qquad \textbf{(2)}$$

$$\boldsymbol{r_e} = \frac{\boldsymbol{1}}{\boldsymbol{4\pi\epsilon_0}}\frac{\boldsymbol{e^2}}{\boldsymbol{m_e\,v^2}} \qquad \textbf{(3)}$$

where, **G** is a Gravitational Constant, it is constant value in any place in the fabric of a Universe, (**G = 6.673 x 10^{-11} N m^2/kg^2**). The speed of light particle in space constant (c=300,000 km/s). **M** is the mass of a Proton particle, and **m** is the mass of an electron particle, **r** is the distance between electron and proton particles of any atoms, typically hydrogen atom. K is a Coulomb's constant ($K = \frac{\boldsymbol{1}}{\boldsymbol{4\pi\epsilon_0}} = 8.975\,x\,10^9\,\frac{N.m^2}{C^2}$). An electric force between negative electrons and positive protons has been determined by Coulomb's law [26]. The mass of an electron particle ($m_e = 9.109\,x\,10^{-31}\,Kg$). The radius of atoms is changeable according to electron orbitals, electron spinning speed, and electron rotation around the heart of an atom. An electron particle is capable of orbiting the heart of an atom at the closest point to the center of an atom with maximum speed, or orbiting the nucleus of an atom at the farthest point from the center of an atom at a lower speed. The radius of a hydrogen atom called Bohr Radius that determined by a Bohr Scientist estimated to be ($r_{Bohr} = 5.3\,x\,10^{-11}\,m$) by using equation (3) when an electron particle orbits the nucleus of an atom with a speed ($v_e = 2.18\,x\,10^6 m/s$). The speed of electron particles decreased at Bohr radius because fabriton particles are abundant widely in this distance from the heart of an atom, and obstacles the motion of electron particle. The mass of a proton particle ($\boldsymbol{M} = 1.673\,x\,10^{-27}\,kg$). By using equation (3) to calculate the radius of an electron particle that orbits the nucleus of an atom with a speed of light (v=c=300,000 km/s) estimated to be ($r_e = 2.81\,x\,10^{-15}\,m$). The speed of an electron particle could be increased or decreased according to its location of transition from an atomic center. An electron particle may orbit the heart of an atom with the speed of light particle or exceed the speed of light, called super transition of an electron or super speed of an electron. Electrons may travel at higher speed at closer points from the heart of an atom, but their elliptical shape of transition may enlarge into a longer point at the edge of an atom. Furthermore, electron particles possibly travel at the same location through a closer point in the heart of an atom by super speed, but the orbital shape of an electron will decrease steeply and contract to be a straight line due to the super transition of an electron particle. The distance between electron particle and proton particle has been decreased steeply, as a result the electric force and transition speed of an electron particle violently increased. The speed of electron particles has been increased to the speed of light at the minimum stable orbit of an electron because fabriton particles are available slightly in this region or it may be free from fabriton particles, because fabriton particles are mostly pushed out by powerful spinning up and down of atomic nuclei. At this closest distance from the heart of an atom, the electron particles could travel at the speed of light under the effect of an electric force and strong nuclear force with the absence of fabriton particles. In the deep heart of an atom, an electron is in free fall because this region is evacuated from fabriton particles by rapid vibrations and transition of the protons and neutrons. Fabriton particles may shield electrons

from evaporation and increase the friction force between electron particles and fabriton particles. The friction force has been increased in the edge of an atom which is filled with fabriton particles. Fabriton particles have enough mass and energy to obstacle or reflect electron particles inside an atom. Fabriton particles had been shifted into the edge of an atom by rapid vibration and instant transition of protons and neutrons in the heart of an atom. The electron particle will fall freely, continuously, and with a higher speed into the vacuum that has been produced by rapid oscillations and transitions of protons and neutrons in the core of an atom to save the general balance of an atom. An atom looks like a gaseous ball which is filled with gaseous molecules, and those gas molecules in random vibrations, collision, and transition into all directions to keep a ball more cohesive and homogeneous. Fabriton particles may decrease the speed of electron particles inside the structure of an atom. The minimum stable orbit of an electron is a place where fabriton particles are available slightly at this zone, it is a free tunnel vacuum among proton, neutrons, and electrons of an atom, electron particle orbits the nucleus of an atom with a speed of light particles, the electric force is very high to accelerate and decelerate electric particles at this fantastic zone. By using equation (1) to calculate the Gravitational force between electron and proton in the hydrogen atom is about ($F_g = 3.6\ x\ 10^{-47}\ N$). An electric force could be determined by Coulomb's law in equation (2), the value of maximum Coulomb's force that can act on the electron due to the nucleus in a hydrogen atom will be ($F_e = 8.17\ x\ 10^{-8}\ N$). The electric force between charged particles could be much stronger than the gravitational force ($\frac{F_e}{F_g} = 2.27\ x\ 10^{39}$). The gravitational force is the weakest of the fundamental forces of nature. Furthermore, eqn. (1) divided by eqn. (2) yield to:

$$\left(\frac{F_g}{Fe} = \frac{GMm}{K\ q_1 q_2} = 4.426\ x\ 10^{-40}\right).$$

The remnant vacuum of a hydrogen atom could be filled with enormous numbers of fabriton particles, and subatomic particles such as the proton, neutron, and electron where distributed widely in the dark fabric of a hydrogen atom. The maximum number of fabriton particles are holding together gravitationally in the structure of a hydrogen atom to complete the space among subatomic particles of the hydrogen atom and keep it much steady and avoid its evaporation. The Positive and negative charged particles are held together strongly by an electric force. The electric force appears and is exchanged among charge particles as electromagnetic lines. The gravitational force between the nucleus of an atom and electron particles in the orbitals should be started and delivered as tunnel vacuum, curvatures, gravitational waves, ripples, and distortions. Atomic fabric matter could be distorted under the stress and interaction of subatomic particles. Protons and neutrons are massive subatomic particles held together by nuclear force and immersed into the dark fabric of an atom. The mass and radius of electron particles are much lower than the mass and radius of proton and neutron particles, as a result an electron particle orbits the nucleus of an atom quickly. The powerful gravitational waves have been produced from the urgent oscillations of protons and neutrons in the core of an atom, and the powerful electromagnetic force that is exchanged between positive and negative subatomic particles maybe spread out from the heart of an atom be sufficient to accelerate the electron particles in the edge of an atom.

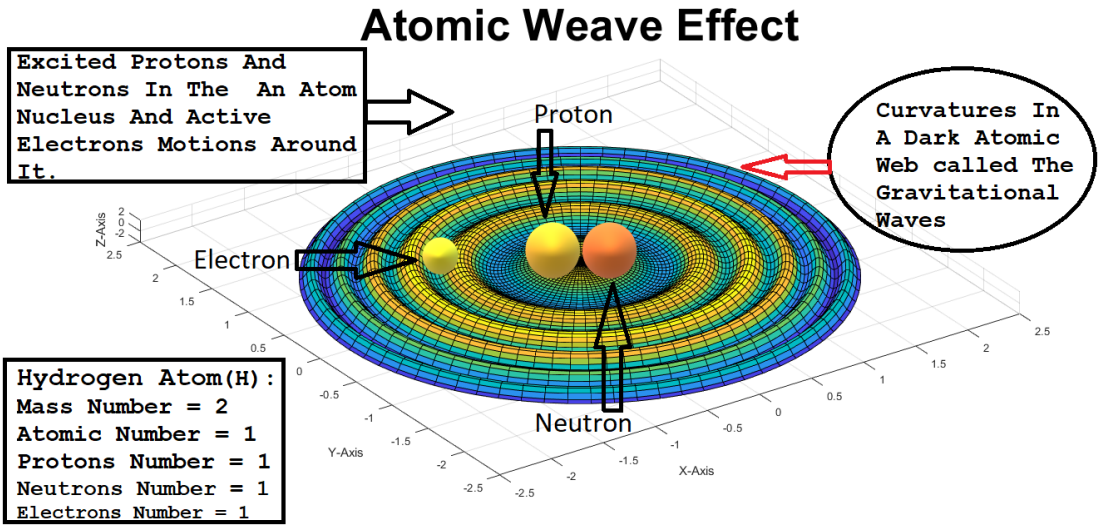

Fig. 1. General Structure of a Hydrogen Atom

5. ATOMIC FABRIC EFFECT

The main structure of any atom consists of minimum and maximum numbers of electrons, protons, neutrons, and fabriton particles. Fabriton particles called dark matter particles. Protons, neutrons, electrons, and quarks are named subatomic particles they are building blocks of ordinary

matter and energy. Subatomic particles are held one another by electromagnetic force, weak and strong nuclear force, and the fourth lowest force of nature is called gravitational force. However, the gravitational force of an atom is weak, but it is essential for an atom to be in balance, and subatomic particles bind one another dynamically by its role. Great numbers of Fabriton particles that could be distributed in the structure of an atom are binding with one another to build up dark fabric for an atom, and they are vibrating quickly beside one another to transfer gravitational waves of subatomic particles. Dark fabric matter of fabriton particles held one another weakly by gravitational force, and subatomic particles held one another strongly by entire forces of nature. The binding energy of subatomic particles may be much stronger than the binding energy of total fabriton particles. Fabriton particles are abundant widely as ocean water to complete the remnant space of an atom, the subatomic particles vibrate and travel at high speed in the atomic weave. Protons and neutrons of any atom held one another strongly and oscillated urgently beside one another inside the dark fabric of an atom to build up a pure tunnel vacuum in the heart of an atom. The powerful gravitational waves and the electromagnetic waves could be exchanged among the total electrons and the nucleus of an atom to keep entire electron particles orbit the nucleus of an atom continuously in the outer orbitals, this phenomenon called Atomic Fabric Effect. The atomic weave effect is the phenomenon appeared from the direct interaction of an ordinary matter and energy with dark fabric matter and energy of an atom to transfer entire energy and gravitational waves among the homogeneous fabric of an atom. The hydrogen atom has a single proton and neutron, and a single electron orbits its centre in the turbulent fabric of an atom. A helium atom contains two positive protons, two neutral neutrons, and two negative electrons that orbit the nucleus [27]. Calcium, Iron, Aluminium, and Uranium atoms have huge numbers of subatomic particles, and fabriton particles as compared to hydrogen and helium atoms.

The atomic structure same as the solar system structure is filled with dark fabric matter and energy, the dark matter particles that called fabriton particles. Dark fabric matter and energy could be distorted steeply by the Sun in the centre of a solar system, and the total solar family as planets, asteroids, natural satellites, and comets orbit the Sun in different locations at variable speed [28]. Dark fabric matter and energy could be curved and shifted strongly by rapid vibrations and transition of protons and neutrons in the nucleus of an atom, and electron particles spin up and down to orbit the centre of an atom by lower and higher speed according to their location from the nuclei of an atom. Hydrogen and helium are low-mass atoms consisting of a few numbers of fabriton particles and subatomic particles. Subatomic particles and fabriton particles held one another by four natural forces as a tightened weave to save the entire fabric of an atom from evaporation and annihilation. Dark fabric matter and energy had completed the space among stars, planets, and black holes. Dark fabric matter and energy have been distorted steeply and shifted to form temporary tunnels when celestial objects and black holes passed through it [29]. Powerful Gravitational waves started by rapid oscillations, transition, and Tunnels of the subatomic particles in the atomic weave of heavy atoms. However, low-mass atoms have minimum numbers of subatomic particles to build up tunnels and produce gravitational waves in the atomic weave. Tunnels, curvatures, and gravitational waves could have occurred in the dark fabric of any atom with any mass and atomic numbers to transfer an atom's total energy, information, and momentum as waves and ripples in the total fabric of an atom.

6. SPACE BETWEEN FABRITON PARTICLES

The space between fabriton particles is changeable according to their distribution in the structure of celestial objects and atoms. Fabriton particles could be squeezed or expanded under the effect and stress of celestial objects, their gravitational fields, and their density. Fabriton particles are abundant widely and steeply compacted around dense objects, and exist slightly in the space between stars and planets where the gravitational field weakens. Fabriton particles are smaller points of matter and energy has been distributed widely in the structure of atoms, molecules, compound materials, celestial objects, planetary systems, stellar systems, black holes, galaxies, and the entire visible universe. The vacuum among fabriton particles may increase and decrease according to the environment and the stress exposed to fabriton particles. The vacuum between Fabriton particles could be squeezed into Planck's length around the Big Bang singularity. The space between fabriton particles could be similar to the radius of fabriton particles around the stellar mass singularity. The vacuum among Fabriton particles is squeezed to Planck's length and fabriton radius where photon particles have been trapped, frozen, and stored inside an event horizon of a black hole for longer eras. An escape velocity for any particle inside a black hole exceeded the speed of a photon particle [30]. The radius of fabriton particles is smaller than the radius of subatomic particles, as a result, huge numbers of fabriton particles have been distributed abundantly in the vacuum and size of atomic balls to keep it smooth, dynamically in balance, and homogeneously. Fabriton particles are shifted and distorted around the nucleus of an atom since Protons and neutrons are vibrated and span up actively inside the core of an atom. Space exists widely among fabriton particles, and the binding energy of fabriton particles is not high enough to calm down the subatomic particles from their violent vibrations and rapid transition through the dark fabric of an atom. The tunnel vacuum produced from the continuous oscillations of protons and neutrons in the heart of an atom where attracts and repulses electron particles to stay at the edge of an atom and

orbits the atomic nuclei continuously. The electromagnetic force between electrons and protons is much stronger than the gravitational force, as a result, an electron particle orbits the heart of an atom approximately 7000 trillion revolutions per second.

The fabriton particles aren't great obstacle in an electron particle's motion and revolution. The electromagnetic force and gravitational waves among an atom's electrons and nucleus increase the binding energy and the stability of an atom. The space among fabriton particles is very low on the edge of a black hole singularity and compacted celestial objects, even photon particles may be suspended and freeze in the surface of those dense celestial objects. The density of a dark fabric matter and energy is so high and the surface of fabriton particles in much attachment with one another to critical vacuum even the photon particles trapped and accumulated in the event horizon of a black hole. An event horizon of a black hole is a much-compacted fabric of distorted fabriton particles under the effect of a black hole singularity. Photon particles and subatomic particles could be trapped and frozen in the compacted fabric of fabriton particles in a much more violent world of matter and energy. Photon particles and subatomic particles lack of additional speed and energy to travel easily inside the compacted fabric of a black hole, where gravitational force and binding energy among fabriton particles prevail over the electromagnetic force that exist among subatomic charges. Ordinary matter and energy froze steeply in the compacted fabric of a black hole. The space among fabriton particles is reduced to a critical distance similar the Planck's length or fabriton radius that is smaller and narrower than the wavelengths of an electromagnetic spectrum, as a result, the photon particles freeze inside an event horizon of a black hole. The photon particle may leave the surface of a black hole where the density of the dark fabric matter and energy lowers than its density in the edge of a singularity.

7. RIGID ATOM

The Atom is not an empty ball entirely, it is filled with several subatomic particles and a tremendous number of fabriton particles. The mass and size of fabriton particles are tiny and quantized. The mass and radius of fabriton particles are precisely smaller than the mass and radius of total protons, electrons, and neutrons. The space of an atom is entirely completed by fabriton particles and subatomic particles that have been distributed widely in the heart and edge of an atom to complete the size of an atom and keep it such a steady and rigid ball. The universe is not empty; it is filled with fabriton particles and energy, and celestial objects of the visible universe have been distributed widely in the entire structure of a universe bubble. Protons and neutrons have enough energy to spin up and down beside one another to build up a pure tunnel vacuum in an atom's heart and actively vibrate to attract and repulse electron particles. The tunnel vacuum that built up in the heart of an atom causes the direct attraction and pulling inward the electron particles into the heart of an atom, otherwise, the gravitational waves that formed from rapid oscillations of atomic nuclei in the core of an atom directly pushed on the electron particles to orbit the nuclei of an atom and keep electron particle to orbit the atomic nuclei at turbulent orbitals of an atom outside the heart of an atom. However, the electromagnetic force is a powerful factor that controls the stability of an atom, but the gravitational tunnel wave that appears in the fabric of an atom is another important factor in keeping an electron particle to orbit the nuclei of an atom much more precisely. Gravitational force and the repulsion force maybe formed from an interaction between different masses of the subatomic particles during the gravitational tunnel waves of an atom. In fact, the electromagnetic force could be formed by electromagnetic field of the positive and negative charges of an atom. Gravitational tunnel waves are rapid distortions, ripples, curvatures, waves, and tunnels that have been formed in the total weave of an atom. The general structure of an atom accurately combines together and strongly holds one another by gravity, electromagnetic force, and strong and weak nuclear forces. Fabriton particles and atoms have spherical shape and quantized by enough mass and energy. The shape and density of an atom could be changed accurately in the quantum world according to the position and momentum of electron particles in the orbitals of an atom. An atom's radius reduces when an electron particle orbits an atom's nuclei in lower level and at closer point from the nucleus of an atom. The radius of an atom should be increased widely when an electron particle orbits the nuclei of an atom at the edge of an atom and from a distant point from the heart of an atom. The volume and density of fabriton particles and atoms could be calculated by eqn. (4) and eqn. (5) as shown as below:

$$\mathbf{V} = \frac{4}{3}\boldsymbol{\pi} r^3 \qquad \textbf{(4)}$$

$$\boldsymbol{\rho} = \frac{\boldsymbol{M}}{\boldsymbol{V}} = \frac{\boldsymbol{M}}{\frac{4}{3}\boldsymbol{\pi} \boldsymbol{r}^3} \qquad \textbf{(5)}$$

Where, **V** is the volume of an atom, subatomic particles, and the fabriton particle, **r** is the radius of subatomic particles, and fabriton particles. $\boldsymbol{\rho}$ is the density of an atomic particles, **M** is symbolized for the mass of entire subatomic particles, and the mass of fabriton particles. The size and radius of fabriton particles are much smaller than the size and radius of atoms, as a result, an atom requires ($2\ x\ 10^{32}$) of fabriton particles to fit it entirely. The density of a normal black hole singularity could be ($\boldsymbol{\rho = 10^{60}\ kg/m^3}$). By using the equation. (5) and cubic the radius of a fabriton particle capable of getting optimum value of singularity density of the low mass celestial objects, as scientists reached Planck's density of a big bang singularity by using the cubic Planck length ($L_{Planck} = 1.6\ x\ 10^{-35}\ m$). The Planck length

is a minimum dimension of universe that has been calculated by scientists' efforts [31]. The Planck length should be the length and radius of any particle now available in nature. Subatomic particles and fabriton particles have clear mass and radius. The Planck density is the density of the first cosmic seed called the Big Bang Singularity was about ($\boldsymbol{\rho = 5.155\, x\, 10^{96}\, kg/m^3}$) after a Planck length is used to calculate it mathematically. The radius of a fabriton particle should be ($r_{Fabriton} = 10^{-21}\, m$). The radius of a fabriton particle could be essential to calculate the minimum density of a stellar mass singularity. Furthermore, the Planck length is crucial to calculate the density of a cosmic mass singularity. The cosmic mass singularity is the singularity of our universe in the stage before a Big Bang era of universe inflation and expansion. The big bang singularity means the entire mass of our universe was squeezed into a tiny point similarly the size of a proton particle or an atom before its evaporation and transition into the infinite world. The universe was a dense ball of compacted singularity at the first steps of its creation and evolution. Fortunately, the universe exploded and expanded after a big bang to build up particles, atoms, gas particles, dust particles, nebulae, stars, planets, celestial objects, galaxies, black holes, supermassive black holes, supergiant black holes, and galaxy clusters. The universe is still continuous in its expansion and atoms fused in the heart of stars to produce heavy atoms and release energy. The universe is filled with celestial objects and fabriton particles. Atom similarly is a rigid body and its structure is filled by subatomic particles and fabriton particles.

8. ATOMIC FABRIC WAVES

Atomic fabric waves are the information, energy and momentum carried out and transferred inside the entire fabric of an atom as gravitational waves and electromagnetic waves to keep subatomic particles, fabriton particles, an atomic structure, and compound materials from evaporation and annihilation. An energy of subatomic particles released as gravitational waves through an atomic fabric during oscillation. Atom is a rigid sphere of subatomic particles and fabriton particles precisely held one another by the four natural forces. Fabriton particles are one type of the natural particles available in the structure of the visible universe and atoms to keep them cohesive and homogeneous. The name of the Fabriton particle is derived from its amazing properties, and it means fast actively binding reacting in total objects naturally. Fabriton particles interact with one another in three dimensions to build up dark fabric matter and energy. Ordinary matter, photon particles, atoms, celestial objects, stars, planets, galaxies, and black holes are capable of interacting with dark fabric matter and energy through gravitational tunnel waves that are crucial to keeping entire cosmic objects in tight connection and avoiding them from any possible reasons of evaporations [32]. The electric or electromagnetic force exists between an atom's positive and negative charges. The gravitational force appears between subatomic particles by their masses. Strong and weak nuclear forces have been produced among the protons and neutrons of an atom to keep them together strongly in the very tiny point at the heart of an atom. The Tunnel vacuum and gravitational tunnel waves could be delivered by rapidly spinning up and down of the total Protons and neutrons in the heart of an atom. The gravitational tunnel waves that come out from the deep heart of an atom will influence total electron particles to orbit the nuclei of an atom actively. The gravitational tunnel waves act directly on the acceleration and deceleration of the total electron particles at the edge of an atom. The gravitational tunnel waves have been spread out continuously from the nuclei of an atom to attract and repulse electron particles and save the atom from evaporation. Subatomic particles could be vibrated in the huge ocean of fabriton particles inside an atom to keep an atom continuously in a static and dynamic balance.

Subatomic particles and fabriton particles may vibrate strongly and slightly by external acts of nature. Subatomic particles in the neighbour atoms may influence the subatomic particles in nearby atoms to increase and decrease their oscillations and the speed of gravitational tunnel waves to transfer energy directly among molecules and compound materials. The static and dynamic balance of an atom and the molecules could be much more complicated dynamic in the quantum mechanics and the astronomy field. Atoms, molecules, and compound materials in the structure of total objects and celestial objects held one another as a fabric named atomic fabric. Thermal energy and acoustic waves have been transferred in the fabric of an atom, molecules, and entire structure of objects to keep an atom, compound materials, and cosmic objects in a perfect balance, cohesive, smooth, and very homogeneous continuously. The dark fabric of an atom and the visible universe is a cohesive and suitable tissue to carry and transfer an energy in the entire structure of atoms and the universe. Atomic fabric is a good intermediate medium for transferring energy as gravitational waves among subatomic particles and compound materials. We live roughly in the ocean of cosmic atomic fabric waves and quantum fluctuations. Subatomic particles tide one another by electromagnetic force and gravitational force. An electron tides an electron particle inside the same orbital or different orbitals at the same atom or different atoms during its rapid oscillations in the dark fabric of an atom. Quantum entanglement should be started by gravitational tunnel waves and electromagnetic waves through the fabric of an atom and entire universe. We live in the quantum fluctuation and atomic fabric wave phenomena. The world is a static and dynamic state of matter and energy to prevent atoms and celestial objects inside a visible universe from evaporation and crunching. An Aluminium Atom is a chemical element with an atomic number of 13 and a mass number of 27. It is abundant in nature and a good conductor of electricity and

heat due to its three electrons in the free state, but its conductivity is lower than copper atoms since it is less dense. Protons and neutrons vibrate violently beside one another in the heart of an Aluminium atom to shake up fabriton particles rapidly, pushing them to shift out and build up a tunnel vacuum in the heart of an atom and release the energy of protons and neutrons as ripples and gravitational waves through the fabric of an atom. Electron particles fall actively and continuously toward the deep heart of an atom to fill up that tunnel vacuum. Fortunately, the powerful gravitational tunnel waves and the centripetal force of an atomic nucleus may repel and keep electron particles in the outer shells of an atom.

Atomic fabric waves are natural events and phenomena that could have occurred in the structure of entire atoms naturally to keep protons and neutrons in the heart of an atom and repel electron particles that orbit the core of an atom in different shells and orbitals according to atomic number of atoms. Subatomic particles swim and vibrate beside one another to absorb and release the entire energy and momentum of an atom. Quantum entanglement may appear among subatomic particles in the structure of a single atom typically, or in the structure of another atom should be existed an entanglement between subatomic particles in a distance billion or trillions of light years away from one another. In fact, two unrelated energy particles at any remote physical location may behave with the same properties as one another and can exchange information according to Quantum entanglement theory [33] [34]. Fabriton particle is a medium and preserver for entire atoms and the celestial objects in the universe. The living creatures, atoms, and celestial objects are living in vibration, and continuous transition to survive successfully as a uniform system. Protons, neutrons, and electrons have high energy to move and travel rapidly inside the fabric of an atom to build up tunnels, distortions, ripples, and gravitational waves in the potential barrier of an atom. Quantum Tunnelling is a quantum mechanical phenomenon in which tiny objects such as an atom or an electron particle can pass and penetrate through a potential energy barrier with higher energy than the particle's kinetic energy. Quantum tunnelling has important applications in tunnel diodes, scanning tunnelling microscopy (electron tunnelling), semiconductors, nanotechnology, and near-field optical microscopy, which operate in photon tunnelling mode [35]. Nuclear fusion processes in the heart of stars and hydrogen bombs use quantum tunnelling to fuse low-mass atoms and produce high-mass atoms by releasing energy and energetic particles. A semiconductor material has been used in an electronic device where electron particles penetrate through potential barriers to transfer data and information is a quantum tunnelling phenomenon. Several scientists participated in developing the theory of photons and electrons, they stated that electron and photon particles have dual properties wave and particle. The Schrodinger equation developed the concept of atomic theory, it is a quantum physics partial differential equation widely used in Quantum mechanics to determine the wave function and energy of atomic and molecular systems, and electron particles [36]. The concept of atomic fabric waves is very complex, and here sketched its shape and its geometry clearly to explain its properties and understand it deeply.

Atom is a fabric of subatomic and fabriton particles that vibrate beside one another to transfer energy and release hidden information about atoms and the universe. The structure of entire atoms and celestial objects consists mainly of four natural particles electrons, protons, neutrons, and fabritons. Protons and neutrons contain a mass larger than the mass of electrons and fabritons, as a result, protons and neutrons are deeply immersed into the heart of an atom. Protons and neutrons can vibrate rapidly in the heart of an atom to build up tunnels in the dark fabric matter and energy of fabriton particles, and electron particles shift out to orbit the nuclei of an atom at the lower and higher levels of energy in the edge of an atom. Every electron particle has its orbital to orbit in the inner and outer shells of an atom. Electron particles are rappelled outside by the centripetal force of an atomic nucleus. The speed and kinetic energy of an electron particle could be decreased when it falls into the heart of an atom because of strong gravitational tunnel waves that come out from the rapid oscillations and transition of protons and neutrons in the core of any atoms. An electron particle will change its kinetic energy into radiation energy when passed inward into the heart of an atom, because of powerful tunnel waves and energy that spread out from heart of atoms. The sun is our bright star that located in the centre of a solar system, it has powerful attraction and repulsion forces that kept planets, satellites, asteroids, comets, and dust particles, and avoid them from evaporation by fabriton particles that are distributed precisely in the total space among solar system family and galaxies. Electrons obey the rules of quantum mechanics, and quantum energy, according to which they can only have specific energies and momentum, and therefore cannot fall into the nucleus of an atom to collide with protons and neutrons. Electron orbits the nucleus of an atom at lower and higher levels due to absorbing and releasing energy during its transition and rapid jumps. An electron transition around the nucleus of an atom is exactly different from the motion of entire planets around the sun, because only gravitational force and centripetal force are in balance in the solar system and planetary system. The planets orbit the stars by gravitational force. An electron particle is bound to the nucleus of an atom by gravitational field and electromagnetic force. An electric force could be widely greater than the gravitational force, as a result, an electron particle orbits the nucleus of an atom with a speed close to the speed of light [37]. By using Matlab Program, and eqn. (6) to draw the effect of proton, neutron, and electron oscillations inside the dark fabric matter and energy when an electron particle

precisely orbits the nucleus of an atom in an elliptical path at the edge and in the outer shells of an atom. Suppose (**-pi/2 < x < pi/2, -pi/2 < y < pi/2**), or it can be written in the following mathematical shape: **-π/2<x<π/2, -π/2<y<π/2**. **N** is the number of electron orbitals inside the outer shells of an atomic fabric.

$$z = \sin(x^2 + y^2) + \cos(x^2 + y^2) + N(x^2 + y^2) \quad \textbf{(6)}$$

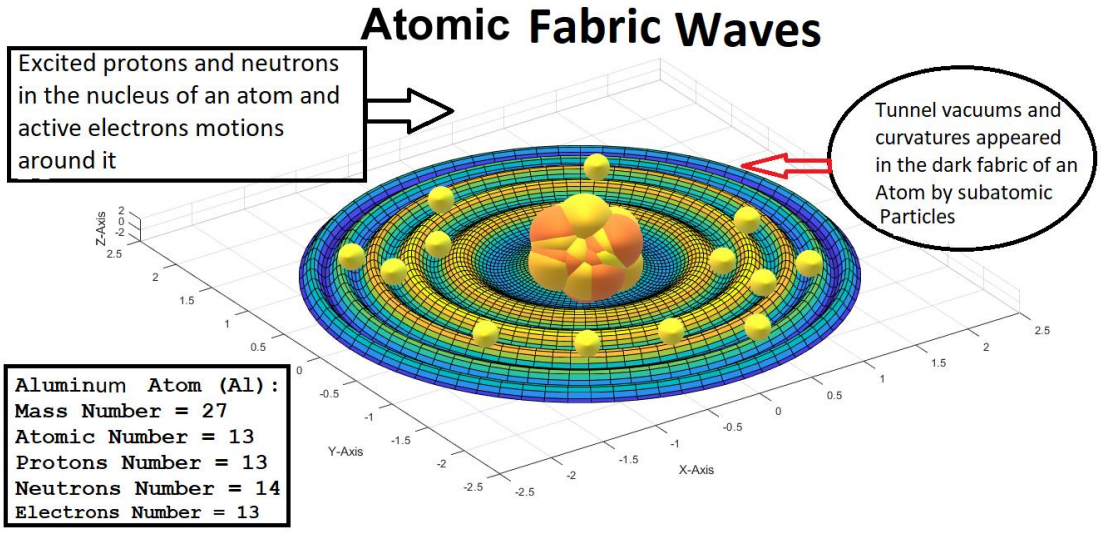

Fig. 2. General Structure of an Aluminum Atom

9. RESULTS AND DISCUSSION

Atom is an ocean and river of subatomic particles spread out densely among fabriton particles. The fishes live in the water of rivers and oceans, similarly, subatomic particles require fabriton particles to keep atoms cohesive and static. Subatomic particles strongly vibrate in the fabric of fabriton particles called dark fabric matter and energy of an atom. Subatomic particles and fabriton particles have different diameters, radii, sizes, masses, densities, gravity, charges, gravitational tunnel waves, and vibrations. Atom is not a vacuum sphere, it is filled up with a tremendous number of fabriton particles and several subatomic particles swimming inside them. The fabriton particles have been distributed widely in the fabric of an atom, and subatomic particles require additional energy and speed to travel in the atomic fabric. Protons and neutrons attract and repulse one another actively in the heart of an atom to build up tunnel vacuum and held electron particle gravitationally to fall down continuously into the heart of an atom or repulse it by centripetal force to keep it away in the edge of an atom. The structure of Atoms in the tissues of our body and inside the fabric of the cosmos is filled up by fabriton particles. Fabriton particle is a tiny point of squeezed matter and energy. The mass and radius of fabriton particles are much lower than the mass and size of an atom and its subatomic particles. The dark fabric matter of an atom and the dark fabric of an entire universe consists of the dark matter particles called fabriton particles. The cosmic dark fabric is necessary to keep the whole universe cohesive and combine it gravitationally, similarly the dark fabric of an atom much crucial to increase the stability of an atom and molecules. The Millikan oil drop experiment contributed to determine the charge, and mass of an electron particle by balancing the gravitational force on a charged oil droplet against the opposing force from an electric field [38] [39] [40].

Electron is a tiny particle with a mass ($m = 9.109\ x\ 10^{-31}\ kg$), and radius ($r = 2.81\ x\ 10^{-18}$ m) has a density ($\rho = 9.8\ x\ 10^{21}$ kg/m^3). Scientists mostly estimated the radius of an electron particle in the lower orbital to be ($r = 2.802\ x\ 10^{-15}$) according to eqn. (3) when electron particle moves with a speed of light at minimum stable orbit. The Proton is a positive charge particle, its mass ($m = 1.672\ x\ 10^{-27}\ kg$), and its radius ($r = 10^{-15}$ m), it has a density ($\rho = 4\ x\ 10^{17}$ kg/m^3). The mass of a proton particle is much greater than the mass of an electron, as a result, the proton is strongly stabilized at the heart of an atom. Electron orbits the nuclei of an atom due to its lower mass, and it is a negative charge particle ($q = -1.602\ x\ 10^{-19}\ c$). Neutron is a neutral charge particle with zero coulombs, its mass ($m = 1.674\ x\ 10^{-27}\ kg$), and its radius ($r = 0.8\ x\ 10^{-15}$ m), it possesses a density ($\rho = 7.8\ x\ 10^{17}$ kg/m^3). Furthermore, the mass of a neutron particle is slightly higher than the mass of a proton, as a result, the proton and neutron are strongly stabilized at the heart of an atom, and both of them spin up and down beside one another to keep an atom cohesively and homogeneously. Eventually, the charge of a fabriton particle is still undefined or maybe zero coulombs as neutron charge, its mass ten billion times lower than the mass of an electron, the mass of a fabriton particle ($m = 9.109\ x\ 10^{-41}\ kg$), and its radius estimated to be ($r = 10^{-21}$ m), it possesses a huge density ($\rho = 2.176\ x\ 10^{22}$ kg/m^3). The fabriton particle has clear mass, radius, and density, and its charge is still unknown, because it is a dark and cold particle. Fabriton

particles have dark, black, and transparent color. Subatomic particles have bright and yellow colors among dark fabriton particles. The mass, and radius of fabriton particles have been determined precisely, and may help us to understand the general properties of dark fabric matter and dark fabric energy. The subatomic particle is an ordinary matter that can be distributed deeply in the dark fabric matter and dark fabric energy of an atom which named the fabriton particles. Fabriton particles are building blocks of dark matter and dark energy, and have been distributed widely in the structure of an atom to complete the vacuum among subatomic particles. Fabriton particles may spin up and down beside one another to build up the gravitational bridge among subatomic particles and hold them gravitationally together. The nucleus of an atom in the heart of an atom, celestial objects in space, and black hole singularity at the core of a black hole are all surrounded by fabriton particles. Fabriton particles and ordinary matter particles surround the black hole singularity. The external surface of a singularity is shielded by dark fabric matter of the steeply condensed fabriton particles. Superparticles have been created inside an event horizon of a black hole under high pressure and thermal condition of a black hole. The superparticle has huge ability to travel through a compacted fabric of a black hole to collide with a singularity or pass beside it into space with a speed higher than the speed of light [41]. Black hole singularity has powerful Gravitational force and an electromagnetic force that prevent singularity from being detected by the naked eyes. The distance and vacuum among black hole particles inside the event horizon of a black hole are critically limited and narrower even light particles can't escape from a black hole easily through the event horizon zone. An escape velocity from an external surface of a black hole singularity exceeded the speed of light. The photoelectric effect is the emission of electrons from the surface of a material caused by electromagnetic radiation that has high frequency and energy such as ultraviolet light. Particles in an Atomic fabric may start with rapid vibrations and transitions while bombarded its structure by electromagnetic particles. Photon particles have enough energy and momentum to increase the turbulences and speeds of subatomic and fabriton particles inside the bombarded atom. An atom is a rigid and condensed ball of subatomic particles that are distributed precisely through the dark fabric matter of fabriton particles in three dimensions. The Subatomic particles and fabriton particles have very tiny mass, radius, and spherical shapes, by using eqn. (3) and eqn. (5) to calculate the size and density of four atomic particles approximately in the following schedule.

Table 1: General Properties of an Atomic Particles

Particles	**Mass**	**Radius**	**Density (kg/m^3)**	**Charges**
Electron	$9.109\ x\ 10^{-31}\ kg$	$2.81\ x\ 10^{-18}\ m$	$9.8\ x10^{21}$	$-1.602\ x\ 10^{-19}\ c$
Proton	$1.672\ x\ 10^{-27}\ kg$	$10^{-15}\ m$	$4\ x10^{17}$	$+1.602\ x\ 10^{-19}\ c$
Neutron	$1.674\ x\ 10^{-27}\ kg$	$0.8\ x\ 10^{-15}\ m$	$7.8x10^{17}$	Zero coulombs
Fabriton	$9.109\ x\ 10^{-41}\ kg$	$10^{-21}\ m$	$2.176\ x10^{22}$	undefined

10. CONCLUSION

Fabriton particle is one of four natural particles abundant widely in the nature. Fabriton particles are abundant inside the structure of total atoms, compound materials, stones, molecules, stars, planets, stellar system, galaxies, event horizon of a black hole, and entire visible universe. Fabriton particles have been distributed enormously in the structure of total atoms and celestial objects to keep them cohesive and homogeneous, and avoiding them from direct Collisions, annihilation, and evaporation. Subatomic particles and celestial objects are required additional energy to build up temporary tunnels and gravitational waves in the structure of dark fabric matter and energy to move slowly or rapidly in one location to another location. Fabriton particles are obstacle in the road of subatomic particles, photons, and celestial objects. The mass of fabriton particle has been calculated mathematically when compared its tiny mass to the mass of atoms and subatomic particles. The mass of fabriton particle is (10,000,000,000) times smaller than the mass of an electron particle. The radius of fabriton particle has been determined when inversely cubic radius of fabriton particle compared and equivalent with a density of a black hole singularity that has a minimum mass. The radius of a fabriton particle is 10,000,000,000 times lower than the radius of an atom. Atom required approximately trillions of fabriton particles to fit it. An electron particle required electromagnetic force and gravitational force to orbit the Protons, and neutrons in the nuclei of an atom. An electromagnetic force could be produced by rapid oscillation of subatomic particles, but gravitational force was formed from distortion of huge numbers of fabriton particles around the protons and neutrons in the nuclei of an atom and electron particles orbit them in the edge of an atom. Proton and neutron are vibrating beside one another in the deep heart of an atom capable of shaking fabriton particles to shift away in the outer surface to build up tiny tunnel vacuum in the core of an atom, and attract and repulse electron particle to vibrate and orbit the nucleus of an atom in the lower and higher orbitals according to energy propagated from the heart of an atom. Dark fabric matter and energy of fabriton particles could be distorted under the mass and vibration of subatomic particles to produce gravitational tunnel waves, atomic fabric

waves in the structure of an atom to transfer energy of an atom and keep it cohesive and homogeneously. The fabriton particle is one of the four natural particles that distributed in the structure of an atom and whole universe. Atom is a complex fabric of matter, energy, momentum, ripples, and waves to transfer information.

ACKNOWLEDGEMENTS

I would like to thank my family and my favourite country Kurdistan.

CONFLICT OF INTEREST

I declare that I have no conflict of interests

FUNDING

This study is funded by myself.

REFERENCES

1. Pullman, Bernard (1998). The Atom in the History of Human Thought. Oxford, England: Oxford University Press. pp. 31–33. ISBN 978-0-19-515040-7. Archived from the original on 5 February 2021. Retrieved 25 October 2020.
2. Andrew G. van Melsen (1960) [First published 1952]. From Atomos to Atom: The History of the Concept Atom. Translated by Henry J. Koren. Dover Publications. ISBN 0-486-49584-1.
3. Melsen (1952). From Atomos to Atom, pp. 18–19.
4. Whittaker, Edmund T. (1989). A history of the theories of aether & electricity. 1: The classical theories (Repr ed.). New York: Dover Publ. ISBN 978-0-486-26126-3.
5. Pullman (1998). The Atom in the History of Human Thought. p. 197.
6. Eric Scerri (2020). The Periodic Table: Its Story and Its Significance, p. 185.
7. Rutherford, Ernest (1919). "Collisions of alpha Particles with Light Atoms. IV. An Anomalous Effect in Nitrogen". Philosophical Magazine. 37 (222): 581. doi:10.1080/14786440608635919.
8. Helge Kragh (2000). "Conceptual Changes in Chemistry: The Notion of a Chemical Element, ca. 1900-1925". Studies in History and Philosophy of Science Part B: Studies in History and Philosophy of Modern Physics. 31 (4): 435–450. Bibcode:2000SHPMP..31..435K. doi:10.1016/S1355-2198(00)00025-3.
9. Freund (1904). The Study of Chemical Composition. p. 288
10. Jean-Baptiste Dumas (1836). Leçons sur la philosophie chimique [Lessons on Chemical Philosophy]. 285–287.
11. Henry Enfield Roscoe, Carl Schorlemmer (1895). A Treatise on Chemistry, Volume 3, Part 1, pp. 121–122.
12. Navarro, Luis. "Gibbs, Einstein and the Foundations of Statistical Mechanics." Archive for History of Exact Sciences, vol. 53, no. 2, Springer, 1998, pp. 147–80, http://www.jstor.org/stable/41134058.
13. Stone, A. Douglas, Einstein and the quantum : the quest of the valiant Swabian, Princeton University Press, (2013). ISBN 978-0-691-13968-5 quoted from Folsing, Albert Einstein, 110.
14. Pais, Abraham (2002). Inward bound: of matter and forces in the physical world (Reprint ed.). Oxford: Clarendon Press [u.a.] ISBN 978-0-19-851997-3.
15. J. J. Thomson (1898). "On the Charge of Electricity carried by the Ions produced by Röntgen Rays". The London, Edinburgh and Dublin Philosophical Magazine and Journal of Science. 5. 46 (283): 528–545. doi:10.1080/14786449808621229.
16. J. S. Farnes[1,2]. (2018). ''A unifying theory of dark energy and dark matter: Negative masses and matter creation within a modified ACDM framework''. A&A, vol 620, DOI: https://doi.org/10.1051/0004-6361/201832898.
17. Richard L Steiner, Edwin R Williams, David B Newell and Ruimin Liu. (2005). ''Towards an electronic kilogram: an improved measurement of the Planck constant and electron mass''. BIPM and IOP Publishing Ltd Metrologia, Volume 42, Number 5. DOI 10.1088/0026-1394/42/5/014.
18. Bragg, W. L. (1920). "The arrangement of atoms in crystals". Philosophical Magazine. 6. 40 (236): 169–189. doi:10.1080/14786440808636111.
19. Wyckoff, R. W. G. (1923). "On the Hypothesis of Constant Atomic Radii". Proceedings of the National Academy of Sciences of the United States of America. 9 (2): 33–38. Bibcode:1923PNAS....9...33W. doi:10.1073/pnas.9.2.33. PMC 1085234. PMID 16576657.
20. Basdevant, J.-L.; Rich, J.; Spiro, M. (2005). Fundamentals in Nuclear Physics. Springer. p. 13, fig 1.1. ISBN 978-0-387-01672-6.
21. R. E. Lapp and H. L. Andrews, "Atomic Structure," in Proceedings of the IRE, vol. 36, no. 9, pp. 1068-1080, Sept. 1948, doi: 10.1109/JRPROC.1948.232307.
22. Liboff, R.L. (2003). ''Introductory Quantum Mechanics''. Fourth Edition, Addison Wesley, Boston.
23. Burke, R. and Weatherford, C.A. (2014) Two-Body Dirac Theory. International Journal of Physical Sciences, 4, 797815.https://doi.org/10.9734/PSIJ/2014/6994.
24. Bagdoo, R. (2019). ''Scenario for the Origin of Matter (According to the Theory of Relation)''.

Journal of Modern Physics, 10, 163-175. https://doi.org/10.4236/jmp.2019.102013

25. Randell L. Mills. (2000). '' The hydrogen atom revisited''. International Journal of Hydrogen Energy, Volume 25, Issue 12, Pages 1171-1183. https://doi.org/10.1016/S0360-3199(00)00035-5
26. S L Ganatra, E R Harland, P Krousti, D Lamper, H Mobasheri, N P Murphy, T Stock, R A Veasey and S J Wright. '' Coulomb's law ''. IOP Publishing Ltd, Physics Education, Volume 29, Number 6 Citation S L Ganatra et al 1994 Phys. Educ. 29391. DOI 10.1088/0031-9120/29/6/010
27. William D. Harkins and Ernest D. Wilson. RECENT WORK ON THE STRUCTURE OF THE ATOM. [THIRD PAPER ON ATOMIC STRUCTURE.]. Journal of the American Chemical Society 1915 37 (6), 1396-1421, DOI: 10.1021/ja02171a003
28. Sabir Sadiq, and Anuar Alias. 2022. "Gravity and Solar System Evolution". American Scientific Research Journal for Engineering, Technology, and Sciences 90 (1):214-37. https://asrjetsjournal.org/index.php/American_Scientific_Journal/article/view/7661.
29. Sadiq, Sabir. (2024). "Black Holes Effect on Rapid Stellar Jumps and Tidal Disruptions of Stars". *Transactions on Engineering and Computing Sciences* 12 (2):21-35. https://doi.org/10.14738/tecs.122.16526.
30. Sadiq, S. (2024). Singularity Sphere in The Heart of a Black Hole. Transactions on Engineering and Computing Sciences, 12(3), 46–63. https://doi.org/10.14738/tecs.123.16742.
31. Cremaschini, C. Planck length in classical and quantum Hamiltonian formulations of general relativity. Eur. Phys. J. C 83, 729 (2023). https://doi.org/10.1140/epjc/s10052-023-11909-w.
32. Sadiq, Sabir. 2024. "An Ordinary Matter and Celestial Objects Interaction With Dark Fabric Matter and Energy". *Engineering And Technology Journal* 9 (12):5734-47. https://doi.org/10.47191/etj/v9i12.24.
33. Nanxi Zou. 2021 J. Phys.: Conf. Ser. 1827 012120. "Quantum Entanglement and Its Application in Quantum Communication". https://doi.org/10.1088/17426596/1827/1/012120.
34. L. Hadjiivanov, I. Todorov. '' Quantum Entanglement''. Bulg. J. Phys. 42 (2015) 128–142.
35. Trixler F. Quantum Tunnelling to the Origin and Evolution of Life. Curr Org Chem. 2013 Aug;17(16):1758-1770. doi:10.2174/13852728113179990083. PMID: 24039543; PMCID: PMC3768233.
36. Smita, S., & Shukla, V. K. (2022). Equation of Schrodinger's wave. International Journal of Health Sciences, 6(S6), 3968–3973. https://doi.org/10.53730/ijhs.v6nS6.10262.
37. Franklin Mason and Robert Richardson. Why Doesn't the Electron Fall Into the Nucleus?, J Chem. Ed. 1983 (40-42). See also the comment on this article by Werner Luck, J Chem Ed 1985 (914).
38. Niaz, Mansoor (2000). "The Oil Drop Experiment: A Rational Reconstruction of the Millikan–Ehrenhaft Controversy and Its Implications for Chemistry Textbook" (PDF). Journal of Research in Science Teaching. 37 (5): 480–508. Bibcode:2000JRScT..37..480N. doi:10.1002/(SICI)1098 2736(200005)37:5<480::AID-TEA6>3.0.CO;2-X.
39. Millikan, R. A. (1913). "On the Elementary Electrical Charge and the Avogadro Constant". Physical Review. Series II. 2 (2): 109–143. Bibcode:1913PhRv....2..109M. doi:10.1103/PhysRev.2.109.
40. Millikan, R. A. (1910). "The isolation of an ion, a precision measurement of its charge, and the correction of Stokes's law" (PDF). Science. 32 (822): 436–448. doi:10.1126/science.32.822.436. PMID 17743310.
41. Sadiq, S. (2025). Radiations Accumulation and Rapid Transition of Particles inside the Black Holes. Engineering And Technology Journal, 10(1), 3526–3540. https://doi.org/10.47191/etj/v10i01.10.