

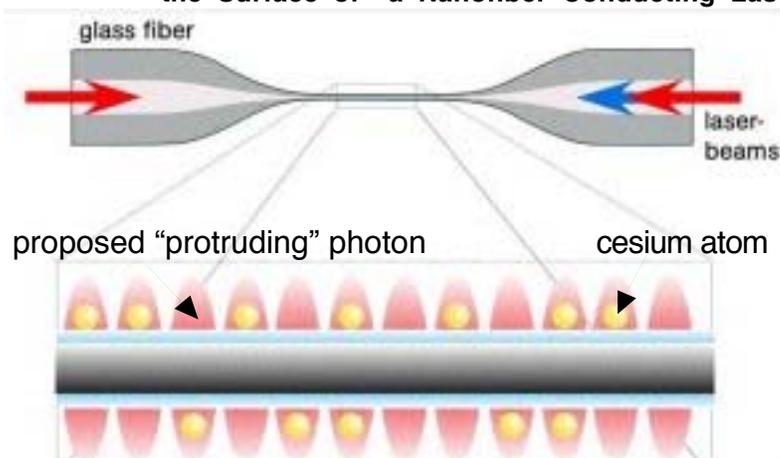
## ***The Actual Explanation of the Mainz “Quantum Computer Switch”*** **A Light-Signal Capacitance Pulse Through a Single-Faceted Crystalline Medium**

Why has knowledge of four-dimensional quantum geometry been ruthlessly suppressed by the gatekeepers of science when it is bringing increasingly sharper focus to scientific phenomenon? A recent discovery illustrates that an inadequate and confused quantum mechanical explanations can be clarified by a geometry based upon the discovery of the fourth quantum dimension.

In 2009, a research group under Professor Arno Rauschenbeutel of the Johannes Gutenberg University in Mainz, Germany, announced the discovery of an “interface between photons and atoms<sup>1</sup>.” It was proposed that this discovery can be used in the long promised— but never realized— “quantum computer.” The researchers stated that a nanofiber-optical cable used in conjunction with an “Bose-Einstein condensate<sup>2</sup>” of individual atoms of the element cesium produced a predictable cesium energy-reaction to individual “photons” which were sent down the nanofiber.

A glass fiber-optics cable was constricted to something akin to a nanofiber (approximately 900 nm) using heat and pressure. When light was sent down the cable something called an “evanescent field” of light was said to surround the the constricted portion of the cable. This was explained as the nanofiber being “*thinner than the wavelength of the light it guides. As a consequence, the light is no longer restricted to the inside of the nanofiber but laterally protrudes into the space surrounding the fiber.*”<sup>3</sup> (AUTHOR’S NOTE: The laser wavelength would have to be greater than infrared for this to be true. The wavelength of the laser used in the experiment was not reported.)

**The Hypothesized “Photon Interface” with Super-Cooled Cesium Atoms Trapped along the Surface of a Nanofiber Conducting Laser Light<sup>4</sup>**



The “evanescent light field” was proposed because light sent through the nanofiber caused “pulsed or temporary reactions” from the super cooled cesium atoms suspend near the fiber (“evanescent” means a short, time-restricted event rather than a continuous event).

<sup>1</sup> *Physicists Develop a Quantum Interface Between Light and Atoms* ; Gulf Pixels; <http://mc2.gulf-pixels.com/?p=1571>

<sup>2</sup> [http://en.wikipedia.org/wiki/Bose%E2%80%93Einstein\\_condensate](http://en.wikipedia.org/wiki/Bose%E2%80%93Einstein_condensate)

<sup>3</sup> *Physicists Develop a Quantum Interface...* Op. Cit.

<sup>4</sup> Source:<http://mc2.gulf-pixels.com/?p=1571>

There are two general problems with this explanation of light “photons” protruding from the fiber causing the cesium to react evanescently. First, wavelengths are measured in the direction of travel, not laterally to the direction of travel (which is defined as wave amplitude). Wavelengths would not “protrude” laterally.

Secondly, even if the proposed “particle state” of light would operate differently than pure wave geometry would predict, the wavelengths which would be needed to “protrude” from the fiber would be much longer than the laser wavelengths probably used<sup>5</sup>. At 900 nm thickness, the fiber is wider than the 820 nm wavelength at which infrared begins. If the proposed “photons” projected laterally at their wavelengths— wavelength measured along the distance of travel— the required wavelengths would be great indeed.

This is especially true since the researchers claimed that the cesium condensate was “trapped” at 200 nm from the surface of the nanofibers, yet was still influenced by the protruding “photon.” Laser wavelengths in the range from 1300-1500 nm would have had to be used as a light source (approximates the wavelength emitted from the “5-f” subshell by the quantum geometric model). Such wavelengths are the longest available to laser technology and are restrict to a solid-state lasing devices, through glass or foresterite mediums<sup>6</sup>. No information as to the actual laser wavelength being used was reported in the experimental summery.

The claim of a 200 nanometer trapping distance for the cesium condensate illustrates a major problem in evaluating any quantum-mechanical research. Often, theoretical calculations are reported as actual observations or measurements. One must conclude that this is the case with the Mainz researchers. The 200 nm distance cannot be accepted until the procedure by which it was concluded is known.

The claim that “evanescent” changes in cesium energy states were detected with light flow through the fiber is less problematic. Cesium (Cs; atomic number 55; atomic weight 133) was obviously chosen because it ionizes readily by heat or light and therefore changes in energy states are easily detected. Further, the researchers would not claim that the cesium condensate trapped along a nanofiber could become a “quantum computer switch” unless they could detect when the switch was “on” and when it was “off.”

### **The Actual Cause of the Mainz “Evanescent Light Field”: a Capacitance Pulse**

The “evanescent field” of light is actually explained by the method by which electron orbitals conduct light through glass optical cables. The “quantum-mechanical” explanation offered by the Mainz researchers has to be rejected.

Because quantum mechanics does not identify the electron orbital as a micro capacitor— the voltage and capacitance values of which are established by emission frequency of light associated with the orbital<sup>7</sup> — Q-M is completely ignorant of the energy exchange between electron and nucleus. A capacitor stores energy in a voltage field, energy which is discharged over time. The orbital capacitor is proven experimentally and mathematically<sup>8</sup>.

The energy is “discharged” across the capacitance field established between the electron

<sup>5</sup> The article neglects to give this information.

<sup>6</sup> See chart at [http://www.lexellaser.com/techinfo\\_wavelengths.htm](http://www.lexellaser.com/techinfo_wavelengths.htm)

<sup>7</sup> See “The Electron Field and Nuclear Capacitance” p. 226 in *The Quantum Dimension*. The Paradigm Co. Boise, Idaho. ISBN 0-94199g-24-0. [www.paradigmphysics.com](http://www.paradigmphysics.com)

<sup>8</sup> Ibid.

and the nucleus. Q-M does not know this because the energy exchange is defined by Planck's Constant and Q-M does not know what Planck's Constant is. It does not know that the energy measure of Planck's Constant resolves to a time constant which determines how energy is discharged across the orbital capacitance field. Planck's Constant is shown to be the energy in electron spin with a time-of-spin supplied by the proton<sup>9</sup>.

**The Exact Formula for Planck's Constant:**

***Electron Spin Energy with Time-of-Spin Provided by the Proton and Electron Diameter being the Fundamental Quantum, "the Alpha Space."***

*h = Planck's Constant = 6.6260755e - 34 Joules;*

*α(alpha space) = diameter of electron = 0.50213757967e - 15 meters*

*t<sub>ψ</sub> = 1/2 spin - time constant = 2.0679691463e - 14 seconds;*

*m<sub>e</sub> = mass of electron = 9.1093897e - 31 kilograms*

*m<sub>p</sub> = mass of proton = 1.6726e - 27 kilograms*

*{Planck's Constant is a function of proton and electron mass and "α"}*

$$h = 0.977777 \frac{m_e \alpha^2 \pi^2}{m_p 2}$$

*{Mass of proton is equivalent to electron spin - time squared.  
Spin - time constant independently determined from orbital model}*

$$\frac{m_p}{0.977777} = (2t_\psi)^2$$

*{Planck's Constant is spin energy of electron; time - of - spin provided by proton}*

$$h = m_e \frac{\alpha^2 \pi^2}{2(2t_\psi)^2} = m \frac{v^2}{2} = (mass) \frac{(spin - distance)^2}{2(spin - time)^2}$$

The energy stored in the orbital capacitance field is equal to Planck's Constant *times* frequency. This represents an increase in the velocity of electron spin, as a function of frequency, because the distance of spin is increased by the quantum orbital radius (which is a mathematical function of frequency<sup>10</sup>) while the time of spin is kept constant.

**The Quantum Definition of "Transparency"**

Transparency may be defined as the entanglement and vectored rebroadcast of light by anodal electrons which are disconnected from the spin contribution being made by a nuclear proton. Electron spin can be disconnected from the proton, because spin time within an orbital has two possible sources; electron orbital velocity as well as from the mass of an attached proton. For any attached proton, time-of-spin(squared) is a mathematical function of the proton's mass by the following formula:

$$\frac{0.977777}{m_p} = \frac{1}{(2t_\psi)^2}$$

$$\frac{m_p}{0.977777} = (2t_\psi)^2$$

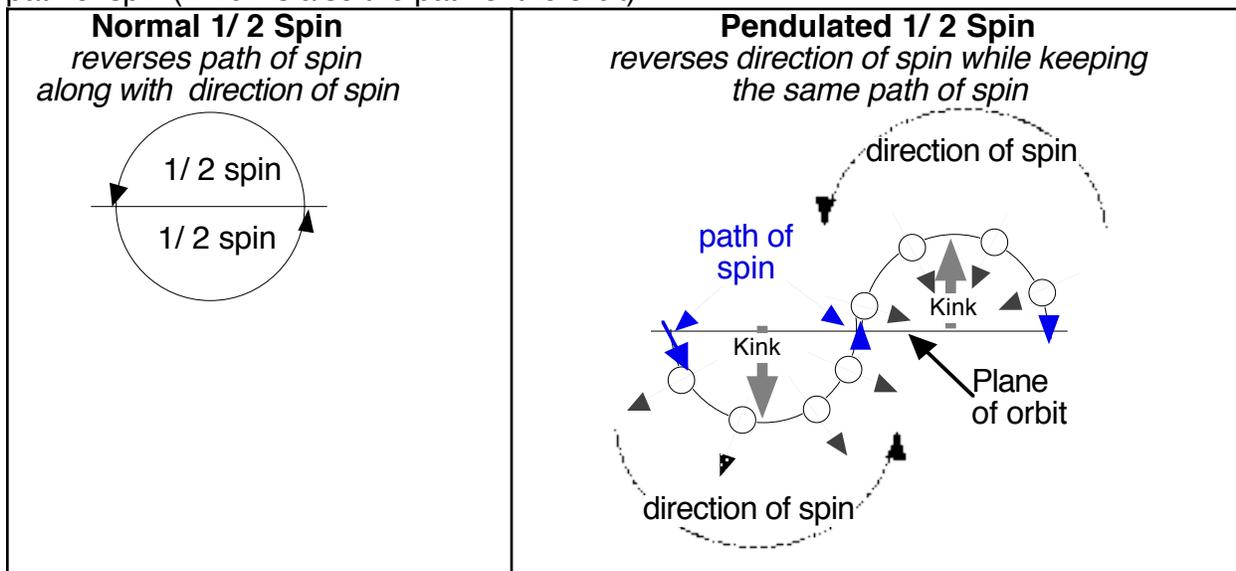
<sup>9</sup> "Deriving an Exact Formula for Planck's Constant by Nuclear Capacitance and the Orbital Standing Wave" p. 20 in *The Quantum Electrodynamics of the Four Dimensional Atom*; SRNRL publication:

<sup>10</sup> "Calculations and Formulas for the Electron Orbital" p.308 in *The Quantum Dimension*. Op. cit.

An anodal electron is absorbed into a negative ionizing subshell. Negative ionizing subshells are subshells which can accommodate additional electrons to those attached to protons. The addition of anodal electrons is possible by doubling the subshell's electron voltage (by energy from the nucleus). If twice subshell electron voltage is less than or equal to the electron voltage of the shell containing the subshell, then extra anodal electrons can be absorbed by the subshell<sup>11</sup>.

Electron spin can be established by proton mass as well as by orbital velocity because spin-velocity and orbital velocity are equivalent. Orbital velocity is provided the anodal electron upon entering the orbit. Entering the orbit also supplies spin characteristics to the anodal electron even though it is not attached to a proton.

Spin velocity is the equivalent of orbital velocity because of the four-dimensional structure of the orbital. An electron orbital is composed of six "pendulated" 1/2 spins per orbit. A "pendulated" 1/2 spin is one which reverses the direction of spin while keeping to a single path of spin (which is also the path of the orbit).



Knowing of the existence of a "pendulated 1/2 spin" within electron orbitals provides linear mathematical solutions to quantum phenomena which, previously, had only been addressed by nonlinear equations.

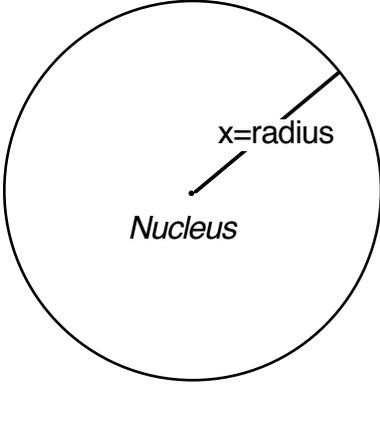
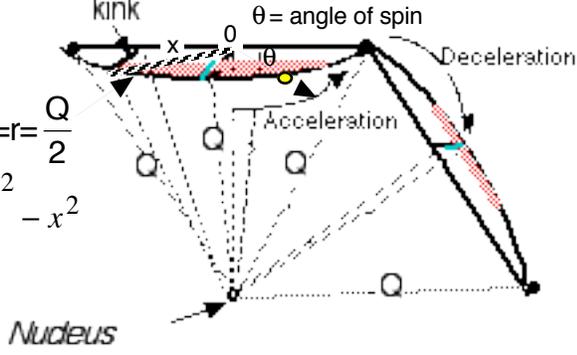
The "pendulated 1/2 spins" of electron orbitals are three dimensional constructions in four-dimensional space. The curved path of the spin/ orbit is composed by the "kinking" of the plane of orbit into curvature. "Dimensional kinking" is a mathematical concept from soliton physics<sup>12</sup>. A single dimension is "kinked" into vacuum— that is takes on two dimensional characteristics— without the intervention of a second dimensional axis. A plane which is "kinked" takes on three dimensional volume characteristics without the intervention of a third dimensional axis. This kinking of two dimensions into volume is a localized construction of volume which "bulges" the three dimensional axis.

<sup>11</sup> See "Anodal Ionization within 4-D Atomic Structure and the failure of the Schrödinger model of electron orbitals"; Paper issued by the Snake River N-Radiation Lab.

<sup>12</sup> See "SOLITONS," p.p. 5-10, by Sascha Vongehr (1997, University of California archives), for the nonlinear solutions to "1+1 dimensional kinking". The book "The Quantum Dimension" (op. cit.) provides the linear solution to "kinking" in chapter 1 and, therefore, provides rational, four-dimensional construction of the electron orbital.

Quantum geometry proposes that the imposition of an extra dimension which kinks the plane of an electron's orbit is a "bulging" of conventional Euclidean volume by intervention of the quantum dimension and that the spin/orbital path occurs within these "bulges." "Kinking" is a nonlinear mathematical formulation in soliton physics<sup>13</sup>.

However, the "bulges" in the quantum model of electron orbitals are actually mathematically regular formations governed by currently unrecognized quantum principles. To keep quantum force consistent, the plane of orbit must be "bulged" (kinked) by the negation of subdivision for the quantum squared with the subdivisional value being determined by the quantum dimension's intersection with the plane of orbit<sup>14</sup>. This is a mathematically regular formula:

Two-Dimensional Orbit in Three-Dimensional space	Three-Dimensional Orbital in Four-Dimensional Space <i>' kink' tension and Acceleration/Deceleration of 1/2 spin</i>
	 <p>radius of spin=<math>r = \frac{Q}{2}</math></p> $(kink)^2 = \left(\frac{Q}{2}\right)^2 - x^2$ $kink = \frac{Q}{n_x}$ $x^2 = \left(1/2^2 - 1/n_x^2\right)Q^2$

The spin/orbital path is composed upon six intersecting planes, set at 60° to one another. Collectively they compose the 360° of a single orbit. The electron is orbiting along a pendulated 1/2 spin path upon six planes all of which are "bulged" at 90° to the plane of orbit and which intersect one another at 60°.

These pendulated 1/2 spin planes form a hexagram within three-dimensional Euclidean space. The "bulged" extra dimensional space intersects Euclidean three-dimensional space at the plane of orbit, forming the hexagram. This hexagram will fit within a circle with a radius equal to the sides of the hexagram. The spin of the electron lies upon the dimensionally "bulged" planes, all of which intersect the plane of orbit at 90°. The path of spin is three-dimensional but occurs within four dimensional space. This path of spin also forms the path of orbit for the electron and, therefore, the velocity of spin is equal to the velocity of orbit.

The pendulated 1/2 spins on descending planes form a potential "standing wave" within the orbital. Kink tension can accelerate and decelerate electron spin and produce a standing wave. The "standing wave" within an orbital was first proposed by Erwin Schrodinger's nonlinear eigenfunction based upon Richard Hamilton's attempted reformulation of Newtonian mechanics. However, It has been demonstrated that Schrodinger's eigenfunction for the first Hamiltonian only produces a partial of the actual graph of a standing wave which Schrodinger misinterpreted as the shape of the orbital<sup>15</sup>.

<sup>13</sup> SOLITONS. Op. cit.

<sup>14</sup> *The Quantum Dimension*, chapt. 1. Op. cit.

<sup>15</sup> "Anodal Ionization within 4-D Atomic Structure and the failure of the Schrödinger model of electron orbitals"; Paper issued by the Snake River N-Radiation Lab. www.SRNRL.com.

Schrodinger failure to recognize his eigenfunction as graphing the standing wave rather than graphing the shape of the orbital has resulted in a serious error in the calculation of electron distribution within the shell/subshell structure of the periodic table<sup>16</sup> .

The erroneous Schrodinger orbitals are also plagued by an uncertainty with respect to simultaneously identifying both electron position and electron momentum and thus introduced a false “uncertainty principle” into quantum physics<sup>17</sup>.

A “standing wave” is a wave which turns back upon itself, the most common example being the vibration of a tensioned string. A deflected string accelerates to the “0” deflection point, then decelerates to a new deflection point where it accelerates again across the former deceleration path. The new acceleration/deceleration wave is across the same pathway, making a stand-in-place wave.

By repeating the same pathway, the wave “squares itself.” The graph of the standing wave is shown to be the perfect square of the sine wave.<sup>18</sup> This is the graph which the Schrodinger eigenfunction imitates but which Schrodinger failed to recognize. The graph is linear with respect to position and momentum by Newtonian mechanics. It is only “uncertain” using Hamiltonian mechanics and Schrodinger’s nonlinear equation. Below it will be demonstrated that the “uncertainty principle” cannot be not true for the actual three-dimensional standing wave in four dimensional space.

Returning to the pendulated 1/2 spins on descending planes which form a potential “standing wave” within the orbital. The spin/orbital pathway is under “kink tension” and therefore has a vibrational frequency potential established by orbital radius<sup>19</sup>. Orbital spin can be accelerated by light pressure against kink tension by a light frequency which is sympathetic with orbital vibrational frequency<sup>20</sup>. When the light pressure is released, spin is decelerated by kink tension. Lightwave pressure against dimensional kinks is a concept which also originated with soliton physics<sup>21</sup> .

Acceleration occurs on the downstream side of a plane of 1/2 spin. Deceleration occurs on the adjacent plane and, therefore, has reverse direction of spin to that of acceleration. This requires that the electron orbital be “coherent” with the light wave in that the “peak” of kink tension must occur at the “peak” of light pressure. This requires that the electron must be repositioned in its orbital relative to the light wave. The capacity of the atoms to reposition electrons is proven by “electron tunneling.”<sup>22</sup> The electron is positioned in its orbital by entangling sympathetic light and its momentum at any point throughout the wave is determined by light frequency. Both position and momentum are established by lightwave entanglement and, therefore, can be known simultaneously. The “uncertainty principle” must be rejected as untrue for the three dimensional orbital in four-dimensional space.

“Transparency” has been defined as the entanglement and vectored rebroadcast of light by anodal electrons which are disconnected from the spin contribution being made by a nuclear

<sup>16</sup> See *The Quantum Dimension* ; op. cit.; p.p. 33-40 for discussion of Schrodinger error in subshell electron infill and the proof provided by the sodium D-lines.

<sup>17</sup> “Anodal Ionization within 4-D Atomic Structure and the failure of the Schrödinger model of electron orbitals”; Paper issued by the Snake River N-Radiation Lab. www.SRNRL.com.

<sup>18</sup> Ibid.

<sup>19</sup> See “Dawson’s Tensor: the Tension to Frequency Conversion” ; p. 283 in *The Quantum Dimension*

<sup>20</sup> See *The Quantum Dimension*; Chapt. 1. Op. cit.

<sup>21</sup> See “Negative Radiation Pressure on Kinks” p.136 in *The Quantum Dimension* ; Op. cit.

<sup>22</sup> *Single Electron Tunneling* ; L.I. Glazman, Theoretical Physics Institute, University of Minnesota. Available at: [www.phys.washington.edu/users/cobden/papers/Glazman\\_dot\\_review.pdf](http://www.phys.washington.edu/users/cobden/papers/Glazman_dot_review.pdf)

proton. The electrons are being accelerated/decelerated by sympathetic light pressure but without discharging the energy accumulated and stored back into the nucleus as heat or into space as reflected light. Stored light-energy is rebroadcast from the crystal face intake-surface established by the anodal electron orbital. It is rebroadcast inward along the ionic bond and through the material.

Transparency in this discussion will be restricted to crystalline forms of silicon dioxide and its ionic bonds. General chemistry holds that silicon dioxide is covalently bonded and, therefore, not available for the rebroadcasting of light by anodal electrons of an ionic bond. The ionically bonded form of silicon oxide— that is, the natural crystalline form of silicon oxide— is silicon tetra-oxide. Four oxygen atoms are ionically bond to the silicon atom and these form crystalline “faces” by setting anodal electrons  $90^\circ$  to the bond. By doing so, they form a crystal called a tetrahedron (a *regular pyramid* whose sides consist of four equilateral triangles).

However, silicon tetra-oxide does not possess good optical qualities. Even though the oxygen anodal electrons form faces at  $90^\circ$  to the ionic bond, multifaceted crystals are not transparent. Multi facets create internal wave interferences. The most common natural form of silicon tetra-oxide is quartz and it tends to be translucence not transparent.

Authentic transparency requires the single faceted potential of silicon dioxide which is the reason  $\text{SiO}_2$  is the bases of all glass making. The glass with the best optical qualities (most transparent) is called “crystal glass” and it uses the heavy element lead to firm up ionic bonds for the silicate.

Contemporary chemistry has failed to recognize the unique ionic bonding characteristics of silicon dioxide. This, however, is a part of a larger problem— that chemistry has failed to recognize that the single faceted crystal may, in fact, be the authentic definition of a liquid. Water (di-hydrogen oxide) forms single faceted surfaces of measurable tension. This is clearly due to the capacity of the oxygen atom to form an ionic bond with one of the hydrogen atoms within the water molecule.

The best known example of a “negative ion” is the hydroxide ion of alkalis (the base ion “HO-”) which forms water in the presence of positive hydrogen ions available from acids.

The hydroxide ion readily forms a water molecule because of a unique characteristic of the oxygen anodal electron<sup>23</sup>. The valence subshell generated by the natural in-fill of oxygen’s eight electrons is unlike any other subshell which has anodal ionization capacity. The oxygen valence subshell is identified as the “2s” (by the correction of the Schrodinger in-fill<sup>24</sup>). That subshell is the only “s” subshell which can ionize; “s” being the highest subshell in any shell. The “2s” can absorb an extra, alien electron by “kicking” an electron into the next higher shell, to become a “3d” electron.

This is possible because the “2s” and “3d” have nearly equivalent electron voltages but are separated by a shell boundary of over twice their electron voltages<sup>25</sup>. By nuclear doubling of the “2s” electron voltage, the boundary between the “2” shell and the “3” shell is overcome placing an anodal electron in the “3d” where it can rest without further multiplication of electron voltage by the nucleus. The hydroxide ion is both stable and

<sup>23</sup> “Anodal Ionization within 4-D Atomic Structure and the failure of the Schrödinger model of electron orbitals”; Paper issued by the Snake River N-Radiation Lab. [www.SRNRL.com](http://www.SRNRL.com).

<sup>24</sup> See *The Quantum Dimension*; p.p. 33-40 for the correction of Schrodinger’s electron subshell in-fill and proof for that correction using the sodium “D-lines.” Op. cit.

<sup>25</sup> Ibid.

resilient and can easily form a water molecule, moving between covalent and semi-ionic bonds as the need to form single-faceted crystalline surfaces arise.

Oxygen is the only element which has the capacity to acquire a single anodal electron which can be isolated from natural valence electrons by a shell boundary. Single oxygen negative ions can form single faceted crystals as proven by the hydroxide ion which forms the tensioned surfaces of water as well as by the crystalline structure of silicon tetra oxide.

Silicon dioxide, like water, has the capacity to form a negative “SiO-” ionic bond within the “SiO2” molecule and to compose single faceted surfaces setting the anodal electron at 90° to the bond. Silicon-dioxide-based glass is actually a very highly viscous liquid as proven by the fact that medieval glass windows are known to “slump” over the centuries.

A single crystalline facet for the silicon dioxide molecule is formed by the anodal electron possessed by one of the oxygen atoms in the molecule. The anodal electron provides the single facet which is aligned by light entanglement to rebroadcast the light .

This is due to the very unique characteristics of the oxygen anodal electron. The oxygen anodal electron is isolated across a shell boundary from oxygen’s natural electrons by its position in the higher “3d” subshell. The isolation of oxygen’s anodal electron allows it to function similarly to the hydrogen bond electron in a covalently bonded hydrocarbon. The anodal electron is free to harmonically acquire all light impedance subshells throughout the structure without interference from nuclear attached electrons. From its superior position, the anodal electron of oxygen can entangle and rebroadcast .

The oxygen anodal electron of silicon dioxide establishes a single faceted crystalline face set at 90° to the ionic bond which, collectively, can form a surface for the material, a surface through which all frequencies of light can be transmitted by rebroadcasting them, rendering the silicon dioxide transparent.

### **Light Transmission through a Single-Faceted Anodal Crystal Causes the Orbital Crystalline Face to Emit Pulses at Nuclear Capacitance**

The entanglement of a light frequency by a sympathetic anodal orbital temporarily provides the anodal orbital with near nuclear capacitance. The orbit essentially becomes the nucleus.

“Capacitance” is the field force generated between unlike charges which are separated by space. Voltage is the potential difference between the charges. The formulas for capacitance are the following:

$$\{From\ electrical\ theory\}: Capacitance(Voltage) = Charge$$

$$Capactiance(Voltage)^2 = Energy$$

$$\{Applied\ to\ the\ orbital\}: C_{orb.}(eV) = e; \quad C_{orb.} = \frac{e^2}{f(h)}; \quad eV = \frac{f(h)}{e}$$

$$C_{orb.}(eV)^2 = f(h)$$

$$f = \{frequency\ of\ light\}; \quad h = \{Planck's\ Constant\}; \quad e = \{elementary\ charge\}$$

$$\Delta eA = \{the\ increase\ in\ electron\ amperage\ by\ light\ entanglement\} = \frac{f}{2f_{\psi}} eA = \frac{C_{nuc.}}{2} (eV)^{\otimes}$$

<sup>26</sup> See “The Entanglement of Light and its Effect upon Capacitance: The Difference between Anodal and Attached Electrons” in the Appendix to this paper. These mathematics are beyond the capacities of most professionals. They must accept them “by rote” as based upon the following lab demonstrations.

$$C_{nuc.} = \{maximum\ capacitance\ always\ available\ to\ the\ nucleus\} = f(C_{orb.}) = 3.874e - 5 \text{ Farads}$$

### **A Simple Test for the “Light-Transmission Charging” of Transparent Materials**

The fact that light transmissions through transparent materials produces increased charge is demonstrated by a set of simple experiments which the Snake River N-Radiation Lab provides for its students. To initiate the demonstration, make strips of equal width and length from a “shiny” transparent hydrocarbon film such as cellophane. Electrostatic charges can be provided these strips using friction.

Our lab has discovered that the more “mono-faceted crystalline” the surface is the better the transparent material will accept the friction charge. A crystal face is a two dimensional plane which will transmit light which strikes it directly while reflecting obliquely striking light. A surface which better approximates a mono-faceted crystal is one which is considered “shiny” (reflects light striking it obliquely). A “dull” transparent surface is less mono-faceted crystalline in that it cannot reflect obliquely striking light. Cellophane is more mono-faceted crystalline than other transparent plastics. We have found that cellophane accepts a stronger and more lasting charge and is a better material for these tests.

A charged strip of cellophane film will attract non-transparent hydrocarbons regardless of their faceted characteristics such as small pieces of paper sheets (faceted), flakes of pepper (non-faceted), fingers (curved facets). However, a charged strip of cellophane film will tend to repel other transparent hydrocarbon films when held “facet-to-facet.” They will repel “facet-to-facet” but they tend to attract when held “facet-to-edge.”

The attraction of “facet-to-edge” is explained because the fields of the light intake facets are established at a 90° opposition to the direction of light travel. The repulsion “facet-to-facet” fields of light intake are set at 180° opposition. The opposed films broadcast light in exactly opposite directions.

If one film is charged and the other is not, they will both repel “facet to facet” and attract “facet-to-edge.” However, If the second film strip is similarly friction-energy charged, the repulsion will become more pronounced. The friction-energy charge is demonstrated to be an anodal boost to the natural light-transmission field established by a crystalline faceted transparent material.

The charge is shown to only be a boost of the natural field established by light transmission because the charge can be eliminated by eliminating the transmission of light through the transparent material. Take a charged transparent film strips and suspend it in a container from which all light is excluded. Suspend the charged transparent strip from a finger, making sure that a “light-tight” cuff is employed for the hand. Within a matter of a minute or so, the darkened transparent film strip will lose its charge and drop from the finger to the bottom of the container. Multiple attempt to reattach the strip to the finger will confirm this loss of charge.

If a second charged transparent film strip is also attached to a finger during the test period and kept in light exposure, the light-exposed strip will remain charged while the darkened strip discharges. If the discharge period in darkness has been long enough, light-deprivation discharge will remain permanent. If, however, the light-deprived film strip is taken from the container too soon, a residual charge will reappear when again exposed to light. The residual charge, however, will be weaker than the charge retained by the continuously exposed strip.

This charge boost is shown to be anodal in character. If a charged transparent film strip is stretched in a frame which is insulated from ground, a metal conductor such as a washer can acquire a negative charge when placed within the field by setting it upon the stretched strip. This anodal ionization of the metal conductor can be discharged to ground when the washer is removed from the field. A negative charge supplied to the washer proves that the field generated by friction energy is providing for the acquisition of anodal electrons and thus is anodal in nature.

### **Applying the Quantum “Transparency” Discovery to the Mainz Data**

The method by which fiber optical cables actual conduct light is not and cannot be recognized by “Q-M.” The fiber optical cable is composed of silicon dioxide molecules which set anodal electrons of oxygen as the mono-faceted light-intake crystalline surfaces. These facet/orbitals are set at 90° to the ionic bond of the molecule. The ionic bonds, themselves are aligned along the cable fibers. This alignment makes the cable a light conductor of a very restricted intake surfaces and a very long length.

Light is transmitted or rebroadcast along the bonds and fibers by the anodal electrons entangling the light and discharging it along the fiber path. The entanglement orbitals are set at 90° to the length of the glass fibers and are essentially lightwave repeaters.

Light entanglement and rebroadcast by anodal orbitals doubling as mono-faceted crystalline surfaces is of a very special character. Because anodal electrons of silicon dioxide molecules are not attached to nuclear protons, they cannot discharge energy gained from entangling light back into the nucleus. The energy normally discharged by nuclear attached electrons must be integrated across the length of the orbital distance for unattached electrons. This produces a “pulse” in capacitance. Light entanglement produces a “pulse” which moves from the relatively restricted capacitance of the the orbital to a much greater nuclear capacitance always available to the nucleus. The “pulse” temporarily makes the light entangling orbital “the nucleus” with respect to the projection of a surrounding capacitance field.

The constriction of the of the fiber optical cable in the Mainz study is actually the issue of light signal saturation. The 900 nm nanofiber optical cable has been constricted to 15.62 *times* the diameter of the most extensive root orbital<sup>27</sup>. This restricts the number of silicon dioxide molecules which can fit within the nanofiber diameter and, in turn, forces a greater proportion of molecules into light-conduction service. What is missing from the Mainz data is any information on light-signal degradation caused by signal conduction through the constricted portion of the fiber optical cable. Fiber optical cables in general go through such signal degradation over distance. Surely the restriction on diameter was a restriction on capacity and the rate by which change in diameter effected signal degradation would tells us how “saturated” the signal was through the constriction.

“Pulsed” changes in capacitance field strength relative to the cesium condensate “receptor” is caused by light flow through the nanofibers. The means by which light “events” and cesium condensates interact is given a different explanation by quantum geometry. The study concluded that the *“evanescent field..... trapped cesium atoms after they have been cooled to a few millionth of a degree above absolute zero by irradiation with suitably chosen laser light.”*<sup>28</sup> ” The study used the Cornell-Wieman laser cooling technique to drop temperature the last few degrees to near “0” (kelvin) and enter the state of matter known as

<sup>27</sup> See “Important Quantum -Dimensional Values” in my book *The Quantum Dimension*; p.p. 8-11; The Paradigm Co., Inc.; Boise, Idaho: ISBN: 0-941995-24-0

<sup>28</sup> Op. cit.

“Bose-Einstein Condensate<sup>29</sup>.”

There is a difference in explanation between quantum mechanics and four-dimensional quantum geometry as to how laser irradiation causes drop in temperature to produce the condensate. The four-dimensional quantum geometric explanation identifies why super-cooled cesium atoms should be extremely receptive to the capacitance “pulses” through the constricted fiber optic cable.

Quantum mechanics holds that “*the statistical distribution of identical particles with integer spin, now known as bosons..... which include the photon as well as atoms such as helium-4, are allowed to share quantum states with each other.*<sup>30</sup>” Cooling is facilitated by the sharing of hypothetical “quantum states” between “photons” and “boson atoms<sup>31</sup>.”

The Snake River N-Radiation lab has experimentally shown that Bose’s<sup>32</sup> and Einstein’s<sup>33</sup> mathematical descriptions of the condensate are wrong. The question which this research has scientifically answered is; “why cannot autonomous atoms (primarily gases) be dropped to absolute “0” temperature by mechanical cooling?” That is, attempts to cool gases much past the Lambda point<sup>34</sup> proved frustrating until 1995 when Eric Cornell and Carl Wieman succeeded using laser<sup>35</sup>. The Lambda point is the point at which autonomous atoms begin to lose their capacity to resist deformation (causing “super fluidity”). The SRNRL n-radiation studies as applied to the four-dimensional atomic model have shown why this is true.

In the four-dimensional atom model, electron/nuclear structure is sustained by a capacitance field which is established between the positive charged nuclear protons and negative charged orbital electrons. This was discussed fairly extensively above.

This capacitance field interacts with the electron voltage of the orbital to provide field energy. That field energy is established by Planck’s Constant which is shown to be the energy of the spin of the orbital electron with the time of spin being provided by the mass of the attached proton.

Electron voltage is the potential difference which is established between the opposite charges. It is known to vary by the electron’s orbital radius as measured in units of the fundamental quantum “alpha-squared.” This principle— that electron voltage must vary by orbital radius as measured in units of alpha-squared— is unrecognized outside the four-dimensional atomic model.

To increase “potential difference” (voltage) between orbitals requires that charges be multiplied by orbital distance<sup>36</sup>. To increase electron voltage by orbital distance requires that

<sup>29</sup> *New State of Matter Seen Near Absolute Zero* : NIST UPDATE - Physics Laboratory Articles; July 24, 1995; <http://physics.nist.gov/News/Update/950724.html>

<sup>30</sup> *Bose–Einstein condensate* ; Wikipedia; [en.wikipedia.org/wiki/Bose%E2%80%93Einstein\\_condensate](http://en.wikipedia.org/wiki/Bose%E2%80%93Einstein_condensate)

<sup>31</sup> The theory collapses because non-permitted “fermion atoms” are shown to condense as well as the predicted “boson atoms.” SEE *Bose–Einstein condensate* op. cit.

<sup>32</sup> Bose, S. N. (1924). "Plancks Gesetz und Lichtquantenhypothese". *Zeitschrift für Physik* 26: 178. doi:10.1007/BF01327326.

<sup>33</sup> Einstein, A. (1925). "Quantentheorie des einatomigen idealen Gases". *Sitzungsberichte der Preussischen Akademie der Wissenschaften* 1:

<sup>34</sup> The Lambda point is the temperature (approximately 2.17 K) below which normal fluid helium (helium I) transitions to superfluid helium II. For superfluids, viscosity (resistance) vanishes. SOURCE:Wikipedia

<sup>35</sup> *New State of Matter Seen Near Absolute Zero* Op. cit.

<sup>36</sup> A common fact of electrical theory.

the electron's charge be multiplied by the orbital radius as measured in units of alpha-squared. The "potential difference" (electron voltage) between one charged electron orbiting one charged proton must be increased by this multiplication of a charge<sup>37</sup>.

Quantum geometry further proposes that a strong nuclear capacitance (3.874e-5 Farads)—a capacitance which is always available to the nucleus— divides the "multiplied electron charge" to establish orbital electron voltages<sup>38</sup>:

*(charge/ capacitance=voltage)*<sup>39</sup>.

$$f = \frac{Q^2}{\alpha^2} = \{orbital\ distance\ measured\ in\ units\ of\ alpha - squared\}$$

$$eV = \frac{f(e)}{C_{nuc.}}$$

The mathematics governing four-dimensional space cannot be derived completely from Euclidean geometry. The fourth quantum dimension requires an independent set of mathematical descriptions for measurement which had to be inductively discovered. Nonetheless, quantum-dimensional mathematics sharpen focus upon physical phenomenon which are only vaguely understood or mystified using three-dimensional assumptions.

The derivation of an exact formula for Planck's Constant is a case in point. The two quantum values which have been derived from systematic quantum geometry; the basic quantum—the "alpha space"— and the "electron spin time constant" as well as its relationship to the mass of a proton. An exact formula for Planck's Constant is derivable from these quantum dimensional determined constants.<sup>40</sup>

The derivation of Planck's Constant from quantum geometry has identified what the constant actual is. Planck's Constant is the spin energy of the electron with the time value of spin being a function of the wave phase time constant as provided by the attached proton<sup>41</sup>. The radius of the electron is the "alpha space" and the proton-supplied time of spin is a function of the "wave-phase time constant."

The application of this geometrically derived formulae for Planck's Constant to the experimental results of the Snake River N-Radiation Lab's negative radiation studies, allow identification of Bose-Einstein condensate and the process by which it operates. Those negative radiation studies found that cotton fibers fluorescing in 365 nm black light dropped in temperature as a function of Planck's Constant and the number of hydrogen bonds in the cotton molecule<sup>42</sup>.

The study identified Planck's Constant as a change in temperature *times* a factored mass of one of the nuclear protons which anchored the cotton molecule's hydrogen bonds. This discovered equality allows for the setting of "change in temperature" equal to Planck's Constant *divided by* the factored proton mass.

<sup>37</sup> Electron voltage is known to change with the electron's orbital radius.

<sup>38</sup> See *The Quantum Dimension*; Chapt. 1

<sup>39</sup> The standard capacitance formulation.

<sup>40</sup> See table of "Important Quantum Values...." in "*The Quantum Electrodynamics of the Four-Dimensional Atom*"; Published by the Snake River N-Radiation Lab.

<sup>41</sup> Ibid. See "Quantum Geometrically Derived Equations for Planck's Constant" in the table of values.

<sup>42</sup> See "Drop in Temperature by N-Irradiation of Cotton and the derivation of Planck's Constant"; p. 161 in *The Quantum Dimension*; The Paradigm Co.;Boise, Idaho; 2009; www.paradigmphysics.com

### From the N-Radiation Study of Cotton Fibers<sup>43</sup>

$$h = \frac{(\text{mass proton}) \left( \frac{\Delta \text{Temp}}{n_s} \right)}{239}; \quad n_s = \text{number hydrogen bonds per molecule}$$

$$\Delta \text{Temp} = \frac{239 (h)}{(\text{mass proton})}; \quad \text{let } "n_s" = 1$$

experimental results = 9.5315903333e - 5° Celsius

calculated results = 9.4680858813e - 5° Celsius

variance experimental to calculated = 1.0067072112

The geometrically derived formula for Planck's Constant reveals that proton mass has a factored nuclear electron-voltage (squared) equivalent.<sup>44</sup>

$$\frac{0.977777}{m_p} = \frac{1}{(2t_\psi)^2}; \quad t_\psi = \text{electron } 1/2 \text{ spin time constant}; \quad eV_N = \text{nuclear } eV$$

$$m_p = 0.977777(2t_\psi)^2 = 0.977777[(10.0006505671)eV_N]^2 = (97.7904226048)eV_N^2$$

By substituting this factored “(eV<sub>N</sub>)<sup>2</sup>” for the proton mass in the experimental data, we are given a factored value of “(Planck's Constant)/ (eV<sub>N</sub>)<sup>2</sup>” which is equal to the experimentally derived “change in temperature.”

$$\Delta \text{Temp} = \frac{239 (h)}{(\text{mass proton})} = \frac{239 (h)}{(97.7904226048)eV_N^2} = (2.444) \frac{h}{eV_N^2}$$

Planck's Constant *divided by* nuclear electron-voltage (squared) is equal to nuclear capacitance<sup>45</sup>.

$$C_N = \frac{h}{eV_N^2} = \text{nuclear capacitance} \quad \Delta \text{Temp} = 2.444^\circ \frac{h}{eV_N^2} = 2.444^\circ (C_N)$$

Nuclear capacitance is the constant capacitance force (3.874e-5 Farads) which is always available to the nuclear proton. It is the capacitance force by which the protonic charge exchanges energy with the electron charge in its orbital<sup>46</sup>.

The experimental “change in temperature” is shown to be a function of 2.444° *times* nuclear capacitance<sup>47</sup>. “Change in temperature” is the amount of energy by which the nucleus must fund the return florescence of a hydrogen bond which is absorbing 365 nm black light. The nucleus requires 2.444° Celsius (2.444 K) in order to exchange energy with the electron in its orbital via nuclear capacitance.

The value “2.444° *times* nuclear capacitance” is the Piezoelectrical exchange between nuclear mechanical energy (heat) and the nuclear capacitance force required to establish orbital electron voltage. This value of “2.444°,” however, is true only for the nucleus of the hydrogen atom (in its protium isotope; mass number “1”). The complexities of heavier

<sup>43</sup> Ibid.

<sup>44</sup> See table of “Important Quantum Values...” in “The Quantum Electrodynamics of the Four-Dimensional Atom”; Published by the Snake River N-Radiation Lab.

<sup>45</sup> Ibid. See “Proton Mass = f (Nuclear eV<sup>2</sup>) → Δ Temperature = f (Nuclear Capacitance)” in above table.

<sup>46</sup> See “DEFINITION: Nuclear Capacitance” at the end of this paper.

<sup>47</sup> See table of “Important Quantum Values...” in “The Quantum Electrodynamics of the Four-Dimensional Atom”; Published by the Snake River N-Radiation Lab. Specifically:

“Proton Mass = f (Nuclear eV<sup>2</sup>) → Δ Temperature = f (Nuclear Capacitance)” in table.

elements, in conjunction with neutron buffering<sup>48</sup> patterns, create different heat requirements for the piezoelectrical exchange of the particular atom.

For example, the so-called “Lambda point” shows that the piezoelectrical exchange heat which is required by helium-4 is 2.17°<sup>49</sup>. If temperatures drops below 2.17 K, helium-4 atoms begin to lose their viscosity.<sup>50</sup> They lose their ability to resist “sheer force,” meaning the nucleus is losing its ability to retain the “shape” of orbital electrical fields against external mechanical force. As temperature is dropped to near absolute zero, the nucleus loses its capacity to establish the electron-voltage forces which are required by electron orbitals.

There is, however, nuclear resistance to the complete loss of all Piezoelectrical heat; the loss which would complete the transformation of the atom to the new state of matter identified as “Bose-Einstein condensate.” Cornell and Wieman demonstrated that the use of a laser could overcome nuclear resistance.

The reason for Cornell and Wieman’s success is not fully understood by conventional quantum mechanics. In order to impede the laser light, the nucleus is required to use the last of its Piezoelectrical heat to place an electron into an orbital which is sensitive to the laser frequency. The last of the super-cooled atom’s Piezoelectrical heat energy is used for this orbital translation. The atom drops into the Bose-Einstein state.

The Mainz “nanofiber-cesium project” succeeded because of an unrecognized characteristic of the condensate into which the researchers had forced the cesium: “[having] been cooled to a few millionth of a degree above absolute zero by irradiation with suitably chosen laser light.<sup>51</sup>” By forcing the cesium into its condensate form, all nuclear capacitance governing the cesium atom’s electron orbitals is completely eliminated.

All nuclear capacitance exchange with the electron shell has been eliminated from the cesium condensate atoms. Isolated from capacitance exchanges with their own nuclei, those cesium electrons have become sensitive to the nuclear capacitance “pulses” expressed by the anodal crystalline facets of the silicon dioxide molecules— the crystalline facets of which are set at 90° to the nanofibers to conduct saturated light signals along the fiber optic cable.

The trapped condensate atoms become receptors to the “pulsed” changes in nanofiber capacitance field strengths which are caused by light flow through the nanofibers. The cesium will be “super sensitive” to these modulations since the nuclei of the condensate atoms have lost the capacity to modify orbital resistance:

**The Loss of Nuclear Capacitance**

$eA = \text{electron amperage}; t_{\psi} = \text{electron } 1/2 \text{ spin time - constant}$  52

$(\text{elementary charge}) = e = \text{amperage}(\text{time}) = eA(2t_{\psi})$

From Standard electrodynamic formula (capacitance)(Voltage) = charge ;	Quantum Dimensional Application $C_N(eV) = f(\text{elementary charge}) = f(e)$
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<sup>48</sup> See subheading “The Anomaly of Nuclear Binding” for the explanation of neutron buffering In “The Quantum Electrodynamics of the Four-Dimensional Atom”; Published by the Snake River N-Radiation Lab.

<sup>49</sup> The “Lambda point” is even lower for the highly excitable isotope, helium-3.

<sup>50</sup> Viscosity is a measure of the resistance of a fluid which is being deformed by either shear stress or tensile stress.

<sup>51</sup> Op. cit.

<sup>52</sup> See *The Quantum Electrodynamics of the Four-Dimensional Atom*. www.srnrl.com. Op. cit.

<p><i>Standard electrodynamic formula:</i>  <i>(Capacitance)(Resistance) = (Time)</i></p>	<p><i>Quantum Dimensional Application</i>  <math>C_N(eV) = f(e) = f(eA)(2t_\Psi)</math>  <math>\frac{C_N}{f} \left( \frac{eV}{eA} \right) = 2t_\Psi;</math></p>
<p><i>Standard electrodynamic formula:</i>  <math>\frac{\text{Voltage}}{\text{amperage}} = \text{Resistance}</math></p>	<p><i>Quantum Dimensional Application</i>  <i>orbital resistance</i> = <math>R_{orb.} = \frac{eV}{eA}</math>  <math>\left( \frac{C_{Nuc.} = 0}{f(2t_\Psi)} \right) R_{orb.} = 2t_\Psi; \quad R_{orb.} \rightarrow \infty</math></p>

With the loss of nuclear capacitance due to the complete expenditure of Piezoelectrical heat energy, the resistance of all orbitals (with respect to the cesium nuclei) are approaching infinity. Cesium nuclei no longer have the ability to influence or modify orbital resistance. Therefore, only the pulsed modulations of the proximate nanofiber capacitance fields can modify orbital resistance of the cesium atoms. Cesium orbital electron voltages must react to the nanofiber field modulations induced by light passage.

**Summary:**

Bose-Einstein condensate occurs when the nuclei of isolated atoms are cooled, by laser, below the absolute temperature necessary to facilitate a nuclear capacitance exchange with the electron. In this condensed state, nuclei lose the capacity to address electron orbitals because nuclear capacitance is no longer available. For gases under this condition, the orbitals will lose their ability to resist sheer force. Those gases will become super fluids.

This loss of nuclear capacitance also explains the results of the research conducted by the Gutenberg University in Mainz, Germany. Isolated cesium atoms were cooled to near absolute zero by laser. The nuclei of the condensed cesium atoms lost nuclear capacitance by withdrawal of needed temperature and could no longer address their own electron shells. As a result of “0” nuclear capacitance from their own nuclei, cesium electrons were influenced by field pulses in nuclear capacitance projected from proximate silicon dioxide molecules conducting monochromatic laser through a nanofiber optic cable.

The light signals were transmitted through monofaceted crystalline faces produced by anodal oxygen in the silicon dioxide molecule. Silicon dioxide, like water, is semi-ionic and semi-covalent in bond. This semi-bonding produces a monofaceted crystalline molecule which is the actual definition of a liquid. Glass is known to be a very viscous liquid rather than an authentic solid, proving the monofaceted crystalline nature of its constituent silicon dioxide.

Oxygen anodal electrons compose the crystalline facets which are set at 90° to the ionic bonds. The ionic bonds parallel and/or compose the nanofibers of the optic cable. The anodal electrons of oxygen are specialized types of anodal electrons which are free to acquire orbits of the needed wave-phase frequencies for light entanglement without interference from natural attached electrons. The anodal electrons of oxygen have replaced all naturally attached electrons as the valence electron.

The energy from light entanglement with anodal electrons cannot be discharged into the

nucleus and must be rebroadcast. This results in a pulse in orbital capacitance which is equal to nuclear capacitance *divided by 2*. These pulses temporarily gave the full orbits of the silicon dioxide facets a capacitance which is usually reserved for the nucleus of an atom. These nuclear capacitance pulses from the crystalline facets are signaled at the frequency of the light being conducted through the fiber optic.

Because the electrons in the condensed cesium had lost all ability to be addressed by the nuclear capacitance of their attached protons, they became sensitive to the field pulses of nuclear capacitance generated by the light-signal being conducted through the proximate nanofiber.

Both the actual cause of Bose-Einstein condensate as loss of all nuclear capacitance and the acquisition of nuclear capacitance pulses by monofaceted transmissions of light are supported by research conducted by The Snake River N-Radiation Lab.

# APPENDIX

## 1. The Entanglement of Light and its Effect upon Capacitance: *The Difference between Anodal and Attached Electrons.*

The anodal electron is not attached to the nucleus and the acceleration/deceleration charge provided the orbital by light entanglement cannot be discharged relative to the nucleus. The spin of the anodal electron is not provided by an attached proton but completely by the velocity required to enter the entanglement orbital. In the four-dimensional atomic model, velocity of electron spin is the equivalent to the velocity of the electron along its orbit path.

Anodal electrons and naturally attached electrons manage differently the energizing of orbital fields by light entanglement. Attached electrons discharge light-entanglement energy under capacitance control of the orbital field. Anodal electrons do not discharge field energy. They rebroadcast light entanglement energy by manipulating field capacitance. The difference is the energy provision or lack thereof from an attached proton. The attached proton, by controlling electron spin, establishes the capacitance of the field as a constant. When that attachment is removed, the capacitance of the field becomes a variable. The placement of an anodal electron in an orbital allows the manipulation of orbital capacitance by light entanglement energy.

### **The Capacitance Discharge of an Electron Attached to a Proton (energy provided by electron spin as contributed by the attached proton)**

*Orbital potential discharge energy is the energy of time - constant electron spin using the exact formula for Planck's Constant as the energy of common - time spin.*

$$\{Potential\ Discharge\ Energy\} = \{Energy\ of\ Electron\ Spin\} = C_{orb.}(eV^2) = f(h) = m_e \frac{f(\alpha^2)\pi^2}{2(2t_\psi)^2}$$

$f(\alpha^2) = Q^2 = (orbital\ quantum\ radius)^2$  ; by the "kink" tension - constant for orbital

$$C_{orb.}(eV^2) = m_e \frac{(Q^2)\pi^2}{2(2t_\psi)^2} ; \quad energy\ of\ electron - spin\ with\ time\ provided\ by\ proton$$

The potential discharge energy of an orbital equals the energy of electron spin. This is the energy which must be discharged by the capacitance field and can be measured as "Farads times (volts)<sup>2</sup>=Joules." In the cases of orbital capacitors, discharge energy is "orbital capacitance times eV<sup>2</sup>." By the quantum formula for Planck's Constant the energy discharged by the capacitance field is shown to be equal to the electron's spin energy for the particular orbital with the time-of-spin being a constant which is provided by the proton. The following formula for "light entanglement energy" is calculated by the Newtonian energy formula for light-pressure acceleration of the electron across the orbital path<sup>53</sup> :

### **The Energy Provided by Sympathetic Light Entanglement**

$$\{Light\ Entanglement\ Energy\} = \{kink\ accel.\ of\ electron\ spin\} = m_e \frac{\pi^2 Q^2 f^2}{2} = m_e \frac{\pi^2 \alpha^2 f^3}{2}$$

$$m_e \frac{\pi^2 \alpha^2}{2} = h(2t_\psi)^2 ; \quad \left\{ \begin{array}{l} \text{From the exact formula for Planck's Constant as the} \\ \text{energy of electron spin with time provided by proton.} \end{array} \right\}$$

<sup>53</sup> See *The Quantum Dimension* ; p.p. 11-12. Op. cit.

$$\{\text{Light Entanglement Energy}\} = m_e \frac{\pi^2 \alpha^2 f^3}{2} = h(2t_\psi)^2 f^3$$

$$2t_\psi = \frac{1}{f_\psi} \quad ; \quad f_\psi = \{\text{frequency of electron spin}\}; \quad f_\psi = 2.417831e13 \text{ Hertz}$$

$$\{\text{Light Entanglement Energy}\} = f(h) \left[ (2t_\psi)^2 f^2 \right] = f(h) \left[ \frac{f^2}{(f_\psi)^2} \right] = m_e \frac{(Q^2)\pi^2}{2(2t_\psi)^2} \left[ \frac{f^2}{(f_\psi)^2} \right]$$

*Light entanglement energy is the energy of electron - spin accleration. It is found by applying the Newtonian formula "E = F(d)" for the spin / orbital path. It is discovered to be "spin energy" times "(light frequency)<sup>2</sup> / (spin - frequency)<sup>2</sup>".*

Light entanglement energy is the acceleration of electron spin caused by light pressure against kink tension<sup>54</sup>. This acceleration energy is determined to be a multiple of orbital electron spin energy by the square of light frequency *divided by* the constant frequency of spin. Acceleration of spin is a function of light frequency as denominated by spin frequency.

For a capacitor in an electrical circuit, to increase the energy across the capacitance field increases the charge since "charge" is equal to "energy *divided by* voltage<sup>55</sup>" and voltage is a constant for the circuit. For standard capacitors, the increase in charge means an increase in current flow since charge is measured in "coulombs" which is defined as the number of electrons in a current (amperes) flowing past a point in a second of time.

For the electron orbital, however, this formulation does not hold. The charge is restricted to the "elementary charge ( e )" of one electron (1.60217733e-19 coulombs). The energy formula governing a standard capacitor which defines charge as electrons in a current crossing a point in a period of time does not apply to the electron in its orbital. "Amperage" or current flow, for a single electron in its orbital must have a different definition than "amperage" has for an electrical current since the orbiting electron is not providing energy in the same way that electrons in a current flow are providing energy.

The solution to this dilemma is to recognize that "electron amperage" is a measure of electron spin and not a measure of current flow in a circuit. The quantum formula for Planck's Constant has allowed us to recognize what an "elementary charge" actually is; that it is the spin of a single electron in the constant time period "2t<sub>ψ</sub>" which is true for any electron orbital. "Current" is defined as one spin of the electron, not as an electron flow past a point in a circuit. The formula for the amperage of electron spin is the following:

$$e = eA(2t_\psi) \quad eA = \frac{e}{2t_\psi} \quad \text{electron amperage is a constant}$$

$$1 \text{ eA} = \{\text{one spin of the electron}\} = \frac{e}{2t_\psi} = 3.8737940865e - 6 \text{ ampers} \quad \text{in standard amps}$$

$$\{\text{elementary charge}\} = (\text{electron amperage})(2t_\psi) = (eA)(2t_\psi)$$

$$\frac{eA}{e} = \frac{1}{2t_\psi} = f_\psi = \{\text{the frequency of electron spin}\} = 2.4178310440202e13 \text{ Hertz}$$

<sup>54</sup> See "The Absorption of Light Energy by Kink Impedance" p. 279 in *The Quantum Dimension*. Op. cit.

<sup>55</sup> Common formula in electronics.

To increase the “charge” in the orbital micro-capacitor is the equivalent of accelerating the spin-time of the electron by light entanglement. However, accelerating “current amperage” (accelerating spin-time) is not directly transferable to the amperage in an electrical current. Spin is occurring in four-dimensional space. Spin in a four dimensional orbit is accelerating current amperage.

In contrast, there is no such thing as an “accelerating current” in an electrical circuit. While current in a circuit may vary, it does so linearly by adding electrons to the current and not by acceleration. Accelerating current can occur only within four-dimensional electron orbitals. To create an equivalence with the linear current amperage of electrical circuitry, one must use the mean velocity of acceleration as the current value for the period of acceleration.

The mean velocity of acceleration is the distance of acceleration over the period of acceleration:

$$\{\textit{acceleration distance}\} = d = \frac{Q\pi}{4};$$

$$\{\textit{period of acceleration is acceleration time across a 1 / 4 spin}\} = t = \frac{1}{2f}$$

$$\{\textit{mean velocity of acceleration}\} = \frac{d}{t} = \frac{Q\pi f}{2}; \quad \{\textit{distance of full spin for orbital}\} = Q\pi$$

$$\{\textit{time of full spin at mean velocity}\} = 4t = \frac{2}{f} \quad \textit{by the above}$$

$$\{\textit{non accelerated time of spin}\} = 2t_{\psi} = \frac{1}{f_{\psi}}$$

$$\{\textit{number of mean - velocity spins in one "2t_{\psi}" spin}\} = \frac{2t_{\psi}}{4t} = \frac{1/f_{\psi}}{2/f} = \frac{f}{2f_{\psi}}$$

$$\Delta eA = \{\textit{the increase in electron amperage by light entanglement}\} = \frac{f}{2f_{\psi}} eA$$

$$\Delta eA = \frac{f}{2f_{\psi}} eA = \frac{f(eA)(2t_{\psi})}{2} = \frac{f(e)}{2}$$

$$\frac{f(e)}{2} = \frac{C_{nuc.}(eV)}{2} \left\{ \begin{array}{l} \textit{The change in electron amperage by light entanglement} \\ \textit{can cause the charge to "pulse" to a higher capacitance} \\ \textit{level equal to nuclear capacitance divided by "2."} \\ \textit{Nuclear capacitance is the highest capacitance available.} \end{array} \right.$$

$C_{nuc.} = \{\textit{maximum capacitance always available to the nucleus}\} = \frac{e^2}{h} = 3.874e - 5 \text{ Farads}^{56}$   
*The charge increase in an orbital field by light entanglement — as measured in electrical current amperage — potentially increases field capacitance to “C<sub>nuc.</sub> / 2 .”*

As demonstrated above, the acceleration of electron spin by light entanglement invests orbital energy. While four-dimensional spin-acceleration energy may be used in calculations,

<sup>56</sup> See “Formulation of Light Frequency as Multiple of Electron Charge;” p. 267 in *The Quantum Dimension*. Op. cit. Review for “Planck capacitance.”

it must be remembered that electronic field values (charge, amperage) must be constant velocity values of spin acceleration energy.

$$\{Acceleration\ Energy\} = \{Light\ Entanglement\ Energy\} = f(h) \left[ \frac{f^2}{(f_\Psi)^2} \right] = m_e \frac{(Q^2)\pi^2}{2(2t_\Psi)^2} \left[ \frac{f^2}{(f_\Psi)^2} \right]$$

See above for calculation

Not all of the energy gained by light pressure acceleration can be discharged by the field. Only that portion equal to “ $f(h)$ ” can be discharged. “ $f(h)$ ” is the only portion which is defined by a constant velocity of spin:

$$f(h) = f \left[ m_e \frac{(\alpha^2)\pi^2}{2(2t_\Psi)^2} \right] \quad \text{From exact formula for Planck's Constant}$$

$$\{velocity\ of\ spin\} = \frac{Q\pi}{2t_\Psi} \quad \text{This is a constant velocity}$$

The acceleration of spin by light entanglement is resisted by any proton attached to the orbital electron; is resisted because the proton is attempting to apply the constant time of spin “ $2t_\Psi$ .”

The mass of the proton is shown to be a function of “ $(2t_\Psi)^{257}$ .”

The protonic attachment across the capacitance field applies its mass to controlling the spin-time of the electron by resisting the acceleration of light entanglement which is attempting to increase field capacitance to “ $C_{nuc.}/2$ .” By forcing time of spin back to the constant spin-time, protonic attachment enforces the capacitance value of the field as “ $C_{orb.}$ ”:

$$C_{orb.}(eV)^2 = E = f(h) = f \left[ m_e \frac{(\alpha^2)\pi^2}{2(2t_\Psi)^2} \right]$$

This is the energy value which can be discharged into the field since it is the only constant velocity charge available.

The remainder of light entanglement energy is the portion resisted by protonic mass to sustain the constancy of field capacitance. Capacitance is the force exchange between the positive terminal and negative terminal of the capacitor. It is forced by protonic attachment to a constant as long as the negative terminal (electron) remains “field attached” to the positive terminal (proton). The portion of light acceleration energy which must be applied to sustain field capacitance constancy is labeled “Field Management Energy.”

**Field Management Energy  
(energy needed to sustain capacitance constancy)**

$$Discharge\ Energy = C_{orb.}(eV)^2 = f(h)$$

$$Field\ Management\ Energy = (Light\ Entanglement\ Energy) - (Discharge\ Energy)$$

$$Field\ Management\ Energy = f(h) \left[ \frac{f^2}{(f_\Psi)^2} \right] - f(h) = f(h) \left[ \frac{f^2}{(f_\Psi)^2} - 1 \right]$$

<sup>57</sup> See *The Quantum Electrodynamics of the Four-Dimensional Atom*; p.3. Paper issued by the Snake River N-Radiation Lab. www.srnrl.com

$$\{\text{orbital electron spin velocity}\} = \frac{Q\pi}{2t_\Psi}; \quad 2t_\Psi = 4.1359382926e - 14 \text{ seconds}$$

$$f(h) = m_e \frac{f(\alpha^2)\pi^2}{2(2t_\Psi)^2} = m_e \frac{(Q\pi / 2t_\Psi)^2}{2} \quad \text{The Energy of constant spin velocity}$$

What happens, however, when the electron is not directly attached to a proton— as with the anodal electrons of negative ions. The inability of the detached proton to control capacitance means that capacitance defined energy must be integrated across the distance from the nucleus to the orbital (since it can't be controlled across the capacitor distance). This integration results in the capacitance energy which would be established by unconstricted light-entanglement increases in electron amperage:

$$\Delta eA = \{\text{the increase in electron amperage by light entanglement}\} = \frac{f}{2f_\Psi} eA$$

$$\Delta eA = \frac{f}{2f_\Psi} eA = \frac{f(eA)(2t_\Psi)}{2} = \frac{f(e)}{2} = \frac{C_{nuc.}(eV)}{2}$$

$$\frac{C_{nuc.}(eV)^2}{2} = E = \frac{f^2(h)}{2}$$

$$D\left(\frac{C_{nuc.}(eV)^2}{2}\right) = D\left(\frac{f^2(h)}{2}\right) = f(h)$$

$$\frac{C_{nuc.}(eV)^2}{2} = \int_0^f f(h) d(f)$$

$$f = \frac{Q^2}{\alpha^2} \left\{ \begin{array}{l} \text{Frequency is the number of alpha - squared units in} \\ \text{the orbital - distance (squared). Frequency is, therefore,} \\ \text{the measure of orbital radius in quantum - squared units.} \\ \text{Integrating across "frequency" is the same as integrating} \\ \text{across orbital radius.} \end{array} \right\}$$

The integration of potential capacitance energy-discharges across the distance of the orbital results in a capacitance “pulse” equal to “nuclear capacitance *divided by two.*” This occurs by electron amperage increases due to electron spin acceleration from light entanglement. When light pressure is released by the wave, accelerated electron spin decelerates rebroadcasting the light. Transparency rebroadcasts light with a pulse in capacitance:

$$\text{Discharge Energy} = 0$$

$$\text{Field Management Energy} = \text{deceleration Energy}$$

$$\text{Light Entanglement Energy} = \text{acceleration Energy}$$

$$(\text{Light Entanglement Energy}) - (\text{Discharge Energy}) = \text{Field Management Energy}$$

$$(\text{acceleration Energy}) - 0 = (\text{deceleration Energy}) = (\text{Light Rebroadcast Energy})$$

$$(\text{Light Entanglement Energy}) = f(h) \left[ \frac{f^2}{(f_\Psi)^2} \right] - 0 = f(h) \left[ \frac{f^2}{(f_\Psi)^2} \right] = (\text{Light Rebroadcast Energy})$$