



**Roger Green**  
Phone 1-848 702 3779  
[info@breakthru-technologies.com](mailto:info@breakthru-technologies.com)

## **“IONIC SPA TECHNOLOGY “**

### **HIGH ENERGY PULSED E.M.F TESLATRON**

**Amplifying the time wave for powerful restorative qualities for the body/mind/bio-field**



### **AN EXPLANATION OF THE MECHANISM BY WHICH IT WORKS** © by Guy Oblensky

We live in an age that seems defined by electronics, with ever more sophisticated uses of electricity and electronic devices in applications that bring us enormous economic and lifestyle benefits. Yet, in that most vital area of all for humanity, the field of health, the application of electricity has

been more limited than the potential identified for it by scientists at the very dawn of modern electronics more than a century ago. To be sure, electronic devices are widely used today in medicine, but almost solely for diagnosis. In particular, mainstream physicians have yet to take up and build upon the promise of electro-medicine as a powerful healing medium. That promise was surfaced explicitly during the industrial revolution by an electronic wizard of that age, Nicola Tesla. Despite Tesla's work in this area and even earlier, indeed ancient, successful uses of electronic and magnetic therapies, conventional medicine still employs almost exclusively chemical, biochemical, and mechanical remedies for injury and disease. Therapeutic electro-medicine has been totally ignored except by a few maverick scientists and physicians who have proposed, studied, and successfully practiced electronic wave therapy and other electromagnetic treatments as healing regimens.

Tesla's contribution in the late 1890's was profound.' He hypothesized that electronic waves produced by lightning discharges could have significant benefits for human health. He developed the Tesla-coil and "magnifying transmitter" to excite the atmosphere into producing the unique energy structure of natural lightning; and, part showman, Tesla often engaged in sensational personal demonstrations of electrical phenomena to illustrate his ability to harness its energy safely. In a more advanced and important refinement, Tesla constructed an impulse-stimulated magnifying coil system with an elliptically shaped output terminal to selectively generate negative ions, which he determined to be best suited for electrotherapy.

Unfortunately, as a private inventor who often had seen the benefits of his earlier work, such as radio, co-opted by others, Tesla kept his negative-ion device a closely guarded secret. However, he did clearly state two of its effects in an early paper, *High Frequency Oscillators for Electro-Therapeutic and Other Purposes*, presented at the 1898 annual meeting of the American Electro-Therapeutic Association, in Buffalo, NY:

"When a person is subjected to the action of such a [magnifying] coil, the proper adjustments being carefully observed, luminous [blue light] streams are seen in the dark issuing from all parts of the body... Soon after the person perspires freely."

Tesla maintained that these blue light streams and radio frequency (RF) electronic wave therapy in general could, in principle, make it possible to minimize aging and disease.

A decade or so later Georges Lakhovsky, a Russian physicist living in France, employed Tesla-coil electrotherapy in successful treatments of plants and patients with cancers. With some assistance from Tesla's publications, Lakhovsky designed and manufactured his own multi-wave 'Tesla coils' and, by 1925, wrote one of the first books on this subject: *The Secret of Life*. Its third edition cites numerous case studies in Italian, French, English and American hospitals.



About this time, another important, though seemingly unrelated, advance was the pioneering work in cell biology of the Russian histologist, Dr. Alexander Gurwitsch. In the early 1920s, Gurwitsch discovered the "mitogenic" wave communication of vital information exchanged between living- cells with biophotons.<sup>2</sup> Gurwitsch coined the term mitogenic, using as root-words "mitos," meaning thread, and "genic," meaning caused by a gene, to identify the vital nature of these inter-cell communications. His experiments showed that ordinary (non-quartz) glass could prevent living cells from exchanging such vital information, explaining the later remarkable success of Dr. Raymond Rife's tuned-light, biophoton approach to electro medicine, described below.

In 1932, Tesla's noninvasive electrotherapy was publicly acclaimed before the American Congress of Physical Therapy. At a 1932 New York City seminar, Dr. Gustave Kolischer announced:

“Tesla’s high-frequency electrical currents are bringing about highly beneficial results in dealing with cancer, surpassing anything that could be accomplished with ordinary surgery.

Foot note”3

Not long after this, Dr. Royal Raymond Rife, a research physician at the University of California at Riverside in the 1930’s, took up the clinical torch. Claims by Lakhovsky and others of astounding medical cures attributable to Tesla’s noninvasive electrotherapy intrigued Rife. As a physician and scientist, Rife reasoned that specific disease pathogens could be identified by their unique resonant response to a variable-wavelength light source. To test this thesis, he invented a device he called the “Universal Microscope,” which itself provided insight as to the central role of the light spectrum of electromagnetic energy in living tissues and disease. He used this device to conduct microscopic studies of a patient’s living blood and or diseased tissue cultures, before and after treatment. The 1944 Annual Report of the Smithsonian Institution published a brief description of how Rife’s Universal Microscope worked:

“Between the source of light and the specimen are subtended two circular, wedge-shaped, block crystal quartz prisms for the purpose of polarizing the light passing through the specimen, polarization being the practical application of the theory that light waves vibrate in all planes perpendicular to the direction in which they are propagated. ...Now, when the portion of the spectrum is reached in which both the organism and the color band vibrate in exact accord, one with the other, a definite characteristic spectrum is emitted by the organism. ...The virus of the *Bacillus thypous* is always turquoise blue, the *Bacillus coil* always mahogany colored, the *Mycobacterium laprae* always a ruby shade, the filter-passing form or virus of tuberculosis is always emerald green, the virus of cancer a purplish red, and so on.

Footnote ”4

Block-crystal quartz optics, pass wavelengths from infra-red to ultra-violet. Shorter, blue wavelengths provided Rife’s Universal Microscope with unprecedented 15,000x magnification, and with this instrument Rife was able to study living blood and tissue samples (in vivo) to dynamically monitor a patient’s diet, immune system health, and disease-response to noninvasive electrotherapy. Once he proved his initial-thesis that disease pathogens could be identified by their unique resonant—response to a specific wavelength of visible light, Rife was lead to another critical insight. He knew that Tesla’s RF wavelengths were too long to be visible, but the wave-shape or energy form-factor exciting Rife’s blue (mercury-argon-plasma) lamp could be made to visibly affect blood and tissue samples in vivo, given the Universal Microscope’s phase-contrast and dark-field features using blue plasma illumination. By simply modulating this blue-plasma lamp’s RF-wave

shape with an audio oscillator, Rife was able to study the plasma's photonic form-factor effect on living cells. Without dwelling here on the complex technical details, we can summarize his results by saying that Rife found a new way to study a diseased cell's response to specific energy structures in vivo, before prescribing the same RF energy form factor to excite similar plasma lamps used for whole body irradiation in the clinical phase of his work. The next step was described by the author, Barry Lines, as follows:

The first clinical work demonstrating the efficacy of Rife's system in the treatment of cancer was completed under the supervision of Milbank Johnson, M.D., which was setup under a special Medical Research Committee of the University of Southern California. 16 cases were treated at the clinic for many types of malignancy. After 3 months, 14 of these so-called hopeless cases were signed off as clinically cured by the staff of five medical doctors and Dr. Alvin G. Foord M.D. Pathologist for the group.

#### Footnote 5

Unfortunately, the report issued by this committee, has gone missing.

#### Footnote 6

In the 1940s, a controversial biochemist and psychologist, Wilhelm Reich found faint blue light around living blood cells in his microscope, and termed it orgone energy.' According to Reich, orgone is a form of life-energy at work within living organisms, expressing itself as emotion and sexuality, but also directly observable in the microscope as a bluish-glowing field around living blood cells and other substances. This bluish-glowing energy was later observed by Reich as a blue glowing aura-like phenomenon around organisms, trees and even mountain ranges. He also asserted that blue orgone exists in a free form within the atmosphere, and Reich wrote about an "envelope" of blue-glowing energy surrounding the Earth long before the first satellite photos confirmed it. Reich was pursued by the FDA for operating his "orgone accelerators" without approval and spent the last year of his life in prison.

Dr. **Robert O.** Becker was another pioneer of more recent vintage. An orthopedic surgeon with the Veteran's Administration, Becker developed his ideas largely on his own and compiled a compelling body of research under government grants, including an electronic explanation of the efficacy of acupuncture and theories about the likely importance of the Earth's magnetic resonance for human health. Becker was twice nominated for the Nobel Prize. However, funding for his research dried up when it threatened established norms, and Becker retired early in 1980. Also, for reasons that are hard to explain beyond simple inertia, the opposition of conventional wisdom, or perhaps even the influence of that formidable force, the drug

industry, Becker's extensive body of work and publications in peer-reviewed professional journals have been largely ignored among conventional physicians and medical researchers.

## Note 8

Despite such lost opportunities, there have been further remarkable advances in recent years, some of which give important new clues as to exactly how electrotherapy benefits the body. As described in the next several paragraphs, discoveries involving electronic wave-particle (photonic) multiplication through **parametric** amplification have made it possible now to amplify, and so measure, the extremely weak biophoton wave-particles emitted by all living cells.

## Footnotes 9'10

By the 1950s the broader scientific world was experiencing a revolution. Advances in quantum mechanics and the seemingly unrelated field of radio astronomy began to remove some of the conceptual barriers that impeded understanding and acceptance of earlier electrotherapeutic discoveries. In one account of new insights from these advances it was declared that:

"Each human being is an emitter of radio waves, a living broadcasting station of exceedingly low power. The stomach wall sends out not only infra-red heat waves but the entire spectrum of light - ultraviolet rays, X-rays, radio waves and so on. Of course, all these radiations are fantastically weak and the radio waves are among the weakest. But the fifty-foot aerial of the Naval Research Laboratory in Washington, the most accurately built aerial in existence, could pick up radio signals coming from your stomach more than four miles away."

By the early 1970's, the esteemed biochemist Dr. Fritz-Albert Popp<sup>12</sup> was able to use this advance in parametric amplification from radio astronomy to measure mitogenic waves emanating from the seedlings of various plants. His study revealed that mitogenic plant communication appears in the red- to-green wavelengths and has illumination intensities as low as a few tens of photons per second per square centimeter. Popp went on to show that given the highly variable loss of its cells, the human body could only remain in balance through mitogenic communication among its cells on the time scale in which atomic electrons change orbit to emit an information carrying photon. He found that, although our body appears to us to possess a well-defined material nature that changes very slowly, on the atomic level we are changing every microsecond. The majority of our living cells are constantly dying and being replaced. For example the pancreas will reproduce most of its cells daily, and cells of the stomach lining are renewed every three days. White blood cells are renewed every ten days and cells of the skin are renewed every four weeks. In total, our bodies essentially renew themselves completely every four years.



Dr. Popp's published works support his thesis that mitogenic luminescence (which he called *biophoton emission*) is an essential component of the life process itself. He extended the theory that the body's DNA code directs the organization of living structures to include the body's overall electromagnetic field as a vehicle for instructions. This presupposes global communication among all the atoms in all of the molecules that together govern the form, function and growth of the whole being. Popp demonstrated the biophoton nature of this mitogenic-wave communication with an ingenious experiment using two quartz test tubes containing live pig blood:

An agent was added to one of the test tubes, and, as one would expect, the blood reacted by producing antibodies. Meanwhile, although no agent was added to the second quartz tube, the blood in it also produced antibodies, and these were antibodies *identical* to those produced by the blood in the first tube, showing that biophoton emissions from a living cell's atomic electron's orbital-transition can initiate biochemical processes needed to preserve life. To confirm the necessary role of biophotons, this experiment was repeated with a lightproof bather inserted between the two quartz test tubes. The interference of a mitogenic-wave barrier prevented antibody information from being communicated to the second quartz tube.

In the late 1970's, Alexis Guy Obolensky published a paper describing his discovery of autparametric force amplification by stimulated energy resonance (FASER), as it applied to electronic plasma lighting.' This was followed in 1982 with a paper on the underlying technology for FASER

Footnote 14

and superluminal demonstrations of Tesla's adiabatic-entropy discovery.

Footnotes 15.16.17

Subsequently, Obolensky received a grant to investigate superluminal-energy technology for use in electromedicine applications.

Through the work that followed, Obolensky found that Tesla's magnifying transmitter could be operated as an impulse modulated negative-ion generator and as such its microwave near-field could make visible the "luminous streams" of faint bluish light first described by Tesla in connection with one of his later electrotherapeutic systems. Obolensky confirmed Tesla's finding that: "*luminous streams are seen in the dark issuing from all parts of the body.*" Obolensky attributed this phenomenon to parametric interaction between the transmitter waves and the body's own electromagnetic field or aura. He found that to achieve this result, the subject must be well insulated from ground to achieve electrostatic equilibrium with the transmitter's elliptical-electrode dome, said dome being a critical element of Tesla's transmitter.

Obolensky observed that in a dark setting this faint bluish light issues only from one the subject's wounded or diseased tissue, if there is any, and two the subject's stimulated acupuncture points. Thus, one of the key potential applications of the transmitter is diagnostic. Then, for troubled subjects, over repeated periods of exposure the beams cease to appear from problem areas as the subject's tissue is returned to health by the electronic therapy. He has conjectured that, unlike the robust ~430 nm plasma light employed by Rife, Tesla's "*luminous streams*" appear to arise from "*force magnifying*" of the body's own mitogenic biophotons.

We have a picture shows an atomic model of a portion of a cell membrane with many thousands of tendrils that collectively vibrate in a torsional, Frolich resonance, mode)<sup>8</sup> The picture was constructed to illustrate the connection between the action of these tendrils and Tesla's *luminous streams* of bluish light when Tesla's superluminal, longitudinal mode spin-waves<sup>9</sup> interact with and amplify the body's unique cell water, torsional hydrogen-bond vibration, thereby enhancing the influence of normal whole-body mitogenic biophotons.

In the terminology of modern quantum mechanics, disease and aging can be described as a process of *entropy*, and electrotherapy based on biophoton phase-conjugate amplification<sup>20</sup> can be said to effectively reduce a subject's cellular entropy, creating a more or less *adiabatic* state.<sup>21</sup> At a deeper level, Obolensky believes that this class of electrotherapy may involve an activation of **atomic memory**.<sup>22</sup> Though there is no simple way to relate entropy reversal to cellular atomic-memory, it makes sense that atomic memory, like the molecular memory imbedded in an uncoiled spring, could provide a model for entropy negation, and consequently, cellular regeneration. (We have provided in an Appendix to this report a brief discussion of atomic memory from a paper in **Scientific American** by Richard Brewer and Erwin Hahn.)

To summarize what we have covered thus far: Results obtained by Tesla, Lakhovsky, Rife, and Obolensky, among others, show that virulent cancer and other diseases can be cured by electronic wave therapy, and without any evidence of the slightest detriment to healthy cells. Studies published by Gurwitsch, Popp, Frolich and many others support the Obolensky hypothesis which suggests that the healing of disease is attributable to the reversal of entropy in affected cells through biophotonics, and is achieved specifically by autoperametric, phase-conjugate amplification of life-saving emissions of mitogenic biophotons.

Further results from these studies show that when a *wavelength is either doubled or halved, with respect to frequency* (i.e., the accelerated or retarded light velocity) in the parametric medium, and the energy is changed by even (as opposed to odd) harmonic intervals, entropy gain can be



canceled by phase conjugation in an energy-density dependent medium—a result that can be called time-reversed light?

#### Note 23

So, at the most fundamental level, the process by which advanced electromedicine works involves a jump past the speed of light to induce time-reversal in the sense of reversing the direction of entropy flow. How can this be? Time reversal seems- not only to contradict our rational perspective of the world as we know it, such a concept flies in the face of the second law of thermodynamics, not to mention Einstein's *special* theory of relativity which declares the speed of light to be both invariant and an insurmountable speed barrier for virtually all phenomena. Our common-sense rejection of this contradiction can be overcome easily, however, when we realize that our reference to time-reversal does not mean a reversal of history, but a reversal of the time-dependent process called entropy production?' if we could automatically put spilled milk back in its bottle, it would not erase the milk having been spilled. It would just time-reverse the effects associated with that event, like playing a motion picture of the event backwards. Given that atomic memory exists, the effect of history, like a motion picture film, is reversible by invoking that memory. The analogy applies to disease and aging.

With regard to Einstein's *special* theory of relativity, there appears to be a direct conflict because it is widely believed that established theory requires an invariant light velocity, the constant "c," and denies the possibility of a disconnection between a wave's length and its frequency—something Obolensky and others routinely accomplish to effect time-reversed light where the entropy flow becomes negative. Clearly though, Einstein's theory is truly *special* because it only applies to the conditions of *empty* space, and by definition, empty space cannot be filled with an energy-density dependant, parametric medium. Whereas, the atmosphere connecting the earth and ionosphere is energy-density dependant, clearly negating a critical condition for special relativity and equilibrium thermodynamics. Relatedly, Prigogine showed, and won the 1977 Nobel Prize for chemistry for showing,

#### Note 25

that biological structures can overcome the so-called *fatal* second law of thermodynamics by staying far from thermodynamic equilibrium to sustain life, such a condition (far-from- thermodynamic-equilibrium) being the dominant state of nature. Prigogine's far-from-equilibrium, entropy-flow equations treat time as a commuting-mathematical operator, not the classical, mathematically commuting parameter, *assumed* so dogmatically in accepted teaching. In summary, his recognition that true equations involving duration must express time as a non-commuting operator, not a linear parameter, provides quantum biology with the required theoretical foundation

for entropy- reduction through phase-conjugate amplification of the body's mitogenic biophotons.

This proposition that time-reversing, variant light speed is the key to understanding advanced electromedicine is well supported by biophotonics. Tesla himself provided an illuminating observation regarding the earth-grounded magnifying transmitter's evanescent

#### Note 26

surface wave: "The wave starts with a theoretically infinite speed, slowing down first very quickly and afterwards at a lesser rate." An invariant light speed would lock the frequency of light to its wavelength. The measured speed of light is ~30 billion cm/sec at thermodynamic equilibrium, so in the English system this so-called invariant velocity is ~one foot per nanosecond. Einstein may have sensed that his perfect-vacuum, thermodynamic-equilibrium caveat was critical and so named his hypothesis the *special theory of relativity*, tacitly implying that the proposition is not universally relevant. If so, the rest of the scientific community has totally missed the point. 27 As a result of Einstein's stature and the convenience of his conclusions, the *general* applicability of the invariance of the speed of light has held a prodigious grip on prevailing wisdom for many decades; it has taken nearly eighty years after Tesla's published findings for science to begin to recognize the possibility of a faster-than-light paradigm.

#### Note 28

Given the formidable barriers of received doctrine, well entrenched vested interests, and the subtleness of the mechanism by which electronic wave therapy actually works, it may not be surprising that this approach remains a tool still well outside the mainstream of medicine. Still, as described in this report, progress has continued and some barriers have fallen. With the age-distribution of the world's population advancing rapidly, rising medical costs engulfing personal and national budgets, and the advances that have been made in the understanding of quanta phenomena, the time may be at hand soon for electromedicine to become less of a fringe area for research and to enter into at least some conventional, if not widespread, use for both diagnostic and therapeutic purposes.

### Appendix

This Appendix reproduces the first page of a seven-page article published in the December 1984, Scientific American.

Atomic Memory : Atomic systems that have decayed from some ordered states can be induced to recover their initial order. The degree to which order is restored allows Investigation of interactions difficult to observe.

By Richard G. Brewer and Erwin L. Hahn.

In 1872 Ludwig Boltzmann, a founder of modern thermodynamics, gave a lecture in which he said that the entropy, or disorder, of isolated systems increases irreversibly as time passes. On hearing this, the physicist, Joseph Loschmidt rose in protest. He argued that the laws governing the motions of all particles are symmetric with respect to time. Thus any system that had decayed from order to chaos could be made orderly once again simply by reversing the momentum of each particle, without affecting the total kinetic energy of the system. In defiance, Boltzmann pointed his finger at Loschmidt and said "you reverse the momenta."

This scholarly conflict illustrates the paradoxical nature of the second law of thermodynamics, which states that systems tend toward maximum entropy. Yet, Loschmidt's argument remains cogent. If one were able to film the motions of any small group of particles and show the film to a physicist, he or she would have no way of telling in principle whether the projector was running forward or backward. Consequently, according to Loschmidt's criticism (which has come to be called the Loschmidt paradox), any law that governs the behavior of large collections of particles should be symmetric with respect to time. While the meaning and implications of the second law are still active topics of research and disagreement (see "The Arrow of Time," by David Layzer; SCIENTIFIC AMERICAN, December, 1975), there now exist several methods by which Loschmidt's time reversal can be realized. In other words, a system of particles that has apparently decayed from a highly ordered state can be returned to that state by reversing the motions (or some other degree of freedom) of its constituent particles. In effect, an assembly of atoms is able to exhibit a kind of memory of its earlier condition.

If a system is to display this kind of atomic memory, it must be prepared so that it has some kind of order, often hidden, in its apparently disordered state. In the atomic systems we shall discuss, this hidden order is provided by exposing samples (which may be solid, liquid or gaseous) to coherent electromagnetic radiation of various types, including radio waves, microwaves and laser beams. Sound waves can also play this role. The reemergence of an ordered state in such systems becomes evident when the sample emits its own coherent electromagnetic pulse, an echo of the earlier radiation. Apart from their inherent interest, these echo pulses and related forms of coherent emission provide novel ways to study the fundamental behavior of atomic interactions.

The concept of hidden order can be demonstrated by an analogy. Imagine a group of runners poised at the starting line of a circular racetrack (see illustration on page 52). The starter fires a gun, the race begins and the

runners spread out along the course, each running at a different fixed speed. Once they have circled the track several times, some runners will have lapped others and there will be no obvious visible correlation between the runners' relative positions and their various speeds. Someone who had not seen the start of the race might assume that there was no particular order in the disposition of the runners, that they represented a disordered system.

Now suppose the runners have contrived to turn around and retrace their paths at some prearranged signal (perhaps a second firing of the starter's gun) that is given  $t$  minutes into the race. If all the runners maintain their speeds, albeit in the opposite direction, they will come together and cross the starting line in unison exactly  $2t$  minutes after the beginning of the race. They will have recovered their initial order. (This order will, of course, disappear once again after the runners cross the line.)

The even simpler case of all runners traveling together at the same radial speed is not to be ignored either. Here the initial order is preserved and there is no need to reverse the runners direction. This example has an electromagnetic analogue, called the "free induction decay" effect, that has found wide use in both radio and optical-frequency regions.

A more concrete example of a memory effect can actually be demonstrated by mechanical means. A viscous fluid is placed in the ring-shaped space between two concentric plastic cylinders. Whereas the outer cylinder is stationary, the inner one is free to rotate about its axis. A streak of colored dye, representing an initial alignment of particles is into the fluid. When the inner cylinder is turned, the dye disperses throughout the liquid. If one were to show the volume between the cylinders to a thermodynamicist, he or she would say that the dye is completely disordered (that the entropy is at a maximum) and that the mixing process is complete and irreversible. Actually, the liquid is in a state of hidden order (or constant entropy): reversal of the rotation of the inner cylinder reverses the mixing process; after an equal number of reverse rotations, the dye streak reappears.

In 1950 one of us (Hahn), then at the University of Illinois, discovered a memory effect that is similar in principle to the cases of the runners and the dye but that operates on the atomic scale. A sample of glycerin was placed in a magnetic field and exposed to two short bursts of electromagnetic radio frequency ( $\nu$ ) radiation, separated by an interval  $t$  of a few hundredths of a second. The sample retained a memory of the pulse sequence, and at time  $2t$  seconds after the first it pulse the sample itself emitted a third pulse, an echo. This phenomenon is known as the nuclear spin echo.

The nuclear-spin echo is a consequence of the gyromagnetic properties of atomic nuclei, such as the proton that constitutes the nucleus of most hydrogen atoms. Because the proton spins and is electrically charged, it has a magnetic moment, which is similar in some ways to the angular momentum of a gyroscope.

## References

1 Among many other contributions, Tesla was the true inventor of radio (as recognized finally in 1943 by the US courts); in 1895 Tesla established the world's first hydro-electric power station at Niagara Falls to produce the high tension polyphase alternating current (AC) for long distance power transmission; and he invented rotating field induction motors to convert that electric power back to mechanical energy. A century later, these power inventions still form the core of electrical power systems and large motors all over the world. Today, though the general public does not recognize his name, electrical engineers around the world recognize him as the greatest electrical engineer of all time and at least the equal, if not the superior, of Thomas Edison as an inventor.

2 **"Life of Alexander G. Gurwitsch and His Relevant Contribution to the Theory of Morphogenetic Fields,"** Lev V. Belousov, *International Journal of Developmental Biology*, 41, 771-779(1997).

3 See proceedings of the American Congress of Physical Therapy, 1932, New York City seminar. It has been alleged that Tesla's breakthrough electrotherapeutic technology was subsequently suppressed by the American medical establishment and authorities abroad. See, for example, Christopher Byrd's work, *A Scandal in the Politics of Science*, which describes the French suppression of the Tesla-inspired work of Antoine Priore'. Christopher Byrd. *The Case of Antoine Priore' and his Therapeutic Machine*, Explore Magazine, V.5 N. 5&6, 1994. No doubt, acceptance of the merits of electrotherapy has been put off as well by numerous seam artists who have created bogus 'Tesla-ray' machines, making it easy for self-appointed authorities to outlaw all RF electrotherapeutic devices except diathermy machines that assist healing simply by heating tissue.

4 The 1944 Annual Report of the Smithsonian Institution.

5 Barry Lynes, ***The Cancer Conspiracy***, ISBN 1-885273-12-6, Elsmere Press, Delmar, NY 12054.

6 There is controversy about this loss. How could every copy of a report from a professional research operation in the mid-twentieth century disappear? Could it have been intentionally suppressed to advance drug company profit, as some have claimed? The conspiracy theory argues that there is

compelling evidence connecting this disappearance with Dr. Morris Fishbein and the American Medical Association (AMA), an organization that some claim has often used strong-arm tactics to enforce allopathic medical dominance over many years. During his twenty-five-year tenure with JAMA, Dr. Fishbein wrote numerous articles attacking ideas opposed to a strictly allopathic view of medical effective practice. One such was ***Fads and Quackery in Healing***, in which he labeled electrotherapy pure quackery.

7 History of Orgonomy & Wilhelm Reich's Discoveries [date]j---.

8 See ***The Body Electric***, 1985, Robert O. Becker. As a surgeon, Becker focused his work on the benefits and role of electricity in the healing of physical injuries (especially bone fractures), though he discussed its likely role and importance for disease in general, including cancer. Becker conducted extensive studies of the "Current of Injury," a faint but measurable electric potential that exists in wounds during healing and which has been shown by Becker and others to be a critical element in the body's natural healing process. Looking back to those he considered his precursors, Becker attributed the first scientific advocacy of electricity as a healing medium to Luigi Galvani, a physicist who discovered the Current of Injury in 1794. Galvani "took [the current of injury] as proof that electricity is the vital force of life that distinguishes it from inanimate matter." However, Galvani's work was disparaged by Volta, a rival, and had no subsequent impact on the development of mainstream Western medicine.

9 Parametric amplification achieves extremely low noise by tuning an energy-density parameter to its second harmonic.

'10 Inter alia, these results have confirmed and advanced the complementary pioneering insights of Tesla and Gurwitsch.

11 John Pfeiffer, ***The Changing Universe. London 1956***

12 Dr. Fritz-Albert Popp founded the Institute of Biophysics. See [www.lifescienlists.de/ib\\_003e\\_.htm](http://www.lifescienlists.de/ib_003e_.htm)

'13 SMPTE papers by Alexis Guy Obolensky.

"14 Alexis Guy Obolensky, ***The Force is Faster Than its Radiations!***, Proceedings of the Second International Symposium on non-Conventional Energy Technology, 1982, in Atlanta Georgia.

15 Tesla's discovery was that energy cannot be created nor destroyed, only endlessly transformed adiabatically in our open universe.

16 Alexis G. Obolensky, ***The Magnetic Force is Faster Than Light'***. Proceedings of the 1986, International Tesla Symposium (5) pg. 29-39.

17 Alexis G. Obolensky, *The Mechanics of Time*, Proceedings of the 1988 International Tesla Symposium, (4) pg. 25.40

18 **The** cell membrane has tendrils which effect a torsional, hydrogen-bond, water vibration at the Frolich resonance.

“19 See [www.aia&us](http://www.aia&us)

20 See, Obolensky’s Time-reversed Light article explaining why entropy does not increase with the progression of time.

**21 Entropy** is the scientific term used to define and measure an increase in disorder over time. An **adiabatic** condition is a state in which disorder is unchanged **over** time.

**22** Robert G. Brewer, *Atomic Memory*, Scientific American, December 1984, Pg. 50-57

23“See, Time-Reversed light, Scientific American...

**24** Ilya Prigogine, *From Being to Becoming*, ISBN 07167-1 107-9, 0 1980, W. H. Freeman and company.

25 Ibid

26 Wikipedia: An evanescent wave exhibits exponential decay with distance, often created by total internal reflection.

**27** In 1900 the U.S. Patent Office rejected Tesla’s claim that his “magnifying” transmitter achieved superluminal velocity, and the US Patent Office still routinely rejects force “magnifying” inventions simply because they claim to circumvent the second law of thermodynamics and special relativity. Einstein called this hypothesis the “Special” Theory of Relativity because he had to *assume* that “fatal” entropy gain was unavoidable in order for his accepted theory to be consistent with accepted thermodynamics.

**28** The fore-mentioned 1977 Nobel Prize awarded to Prigogine acknowledged that living systems can time-reverse entropy and can thereby



circumvent the “fatal” second law, which implies also circumvention of Einstein’s *special*, invariant light- speed, corollary. In addition, in 1978, astrophysicists from the Max Plank Institute reported that they were tracking numerous galaxies moving faster than the speed of light, again a clear contradiction to Einstein’s propositions that one the speed of light is a constant and two nothing can exceed the speed of light. So a variable light speed and time reversal in the sense of reversing entropy-flow dependent processes are indeed real phenomena. Electro-medicine works by enabling us to tap that process.

Copyright 2008 by Alexis Guy Obolensky and Charles Cathcart.



**A Short History: Errors Stemming from  
Unidimensional  
Treatments of Time and Electromagnetic  
Phenomena**

**Alexis G. Obolensky, Phillip Shinnick, Ph.D., M.P.A.,  
L.Ac.,**

## Charles D. Cathcart, Ph.D.

Electro-magnetic energy involves *fundamentally* different time and force-field qualities. The reciprocally symmetric coupling of these different energy qualities inspired Carl Freidrich Gauss, Wilhem Eduard Weber and others to invent instrumentation for *absolute* energy measurement using Gauss's centimeter-gram-second (CGS) units for the dimensions of length, mass and time. Symmetric electric *and* magnetic energy coupling defines absolute CGS measurement because the shared unit-numeric is unique. It is the *only* energy value that can unify these reciprocally coupled time and energy force-field qualities. Time symmetry couples the linear momentum associated with gravitating mass to the massless atomic spin-angular momentum that can negate entropy. For example, the metric scale measuring this etheric magnetic energy employs integratable linear numbers and reversible atomic-time seconds. On the other hand, measuring the ponderable gravitation associated with electronic energy (voltage and current) requires square-law numbers and irreversible dynamical-time seconds. Ponderable electronic mass energy introduces gravity's linear-momentum and its irreversible entropy flow. Ethereal magnetic energy inverts its spin-angular momentum vector to reverse entropy flow. This time and momentum duality required James Clark Maxwell to employ quaternion calculus to explain Michael Faraday's electromagnetic discoveries with the average-value magnetic energy and root-mean-square-value electric energy unit numeric only provided by the absolute CGS Gaussian metric system. Unfortunately, such advanced reasoning escaped popular understanding and in 1908, the CGS metric system's symmetric, *absolute unit*-value energy numerics and Maxwell's *quaternion* mathematics were replaced by today's meter-kilogram-second (MKS) asymmetric metric system that institutionalized Oliver Heaviside's flawed revision of Maxwell's equations. A century later, this grossly erroneous unidimensional metric and Heaviside's measurement error still confounds Albert Einstein's *special* theory of relativity and the *universal* reality of quantum mechanics.

A pole shifting electron earth atomic similitude may help illustrate quantum mechanical reality—a reality now grounded by the Pauli Exclusion Principle that essentially prohibits pairing of gravitating electron spin-angular momentum particles having identical quantum statistics. These spin- $\frac{1}{2}$  mass carrying particles called fermions obey dynamical-time linear momentum which makes

entropy flow irreversible. Conversely, non-gravitating magnetic particles having integral spin called bosons obey intrinsic atomic-time spin-angular momentum statistics that facilitate long-range coherence and entropy flow reversal. The nuclear sun of our solar system produces gravitation's linear-momentum heat, thus increasing the earth's accumulated fatal entropy. Fortunately for life on earth its ethereal bosons can periodically reverse the earth's angular momenta to negate otherwise fatal entropy gain. In point of fact as opposed to similitude, the so-called "fatal" positive entropy, required by the Second Law of *Equilibrium* Thermodynamics, was proven erroneous in 1977 when Ilya Prigogine received the Nobel Prize in chemistry by revealing how both living and inanimate systems can circumvent otherwise fatal positive entropy flow with atomic time's saving grace, the momenta reversing (adiabatic) loophole revealed in Prigogine's *far-from-equilibrium* thermodynamic equations.

Why would this be important? The full implications of living tissues going backwards in atomic time have already been applied in medicine.<sup>i</sup> As we all know, energy itself is neither created nor destroyed, it only changes form. To understand how a given energy structure's entropy can become *adiabatic* (that is, with no gain in entropy), we must put aside erroneous beliefs, including the second law of equilibrium thermodynamics and its electrical corollary, the Maximum Energy Transfer Theorem, which follows the above second law and requires exhausting 50% of the available energy to maximize the energy transfer gradient. We do not ask the reader to ignore current thinking, rather we provide in our brief review of history the tools to think through and replace this outmoded erroneous view with a more accurate one. When one begins to look at today's global energy waste through the earlier, holistic and more accurate lens offered by Hamilton's quaternion calculus, Maxwell's original electromagnetic equations and the absolute CGS Gaussian metric system, a new exciting world of possible solutions begins to emerge.

Electro-motive-force (EMF) has a diverging gravity-like field that decreases with distance squared; this invokes gravity's dynamical-time and positive entropy. Dynamical seconds do not integrate and electric energy must employ root-mean-square (RMS) numbers. Conversely, magneto-motive-force (MMF) has a converging, anti-gravity field that decreases with distance directly and its atomic

seconds can integrate magnetic spin-vector inversions for adiabatic entropy continuity. Atomic seconds integrate intrinsic spin angular momentum and we can visualize the magnet's converging force field and entropy reducing circulation. Elementary school children see what happens when their teacher sprinkles iron filings on a paper covering a simple bar magnet. Commutating loops appear near the north and south polar ends of the magnet to illustrate magnetic energy congregation and circulation of looping streams that commute between north and south magnetic poles.

Only the *ethereal* MMF field energy can be measured with ordinary (integrating) numbers and reversible atomic-time. Conversely, the *ponderable* EMF force field's energy measurement requires special (non-integrating) numbers because gravity's dynamical-time is irreversible. Even when the EMF is unleashed as kinetic energy in a conducting medium, the moving EMF field's potential energy is being converted by conduction loss into entropic heat and the kinetic impulse energy of a time-varying magnetic field. Its harmonic wave structures may invoke periodic alternating currents (AC), or impulsive direct currents (DC). With AC, the MMF field is periodically reversing so the average value always integrates to zero. The Giorgi-Heaviside absolute-average-value (AAV) double standard for AC energy measurement began by using mechanical rectification of AC to illustrate the 1.1111 RMS to AAV ratio used to define the International Ampere's Coulomb numeric.

RMS scalar numerics *and* AAV vector numerics are *both* required to achieve true measurement of the nonlinear magnetic response of energy density dependent electrical circuits, including those related to living tissue in Electromedicine Research. Gauss recognized the importance of energy density dependent parameter variation and developed his fine-grained CGS measurement system to handle these nonlinear issues with appropriate precision. Maxwell addressed the complexity of such electromagnetic phenomena using the cumbersome but effective quaternion calculus. He published his complete set of 20 electromagnetic equations with 20 unknowns in 1864. (Quaternion calculus had been developed roughly two decades earlier by Sir William Rowan Hamilton.) In developing his analysis, Maxwell used a term he and others called "ether" in referring to the non-physical nature of the MMF field energy, and he introduced the symbol  $c$  in his equations for the

*variable* speed of electricity, the symbol later made famous in 1905 by Einstein as the *constant* speed of light in his *Special* Theory of Relativity. Einstein added the word “special” to signify his use of the strictly *rectilinear*, Cartesian coordinate system since it mandates thermodynamic equilibrium by ignoring the geometric phase associated with global rotation in our distinctly *curvilinear* reality. Maxwell’s landmark “Treatise on Electricity and Magnetism,” recognized the need for Gauss’s curvilinear system of absolute measurement when defining the unit-value numerics in the opening “PRELIMINARY On the Measurement of Quantities”:

“The unit of Force is the force which produces unit of momentum in unit of time. Its dimensions are  $MLT^{-2}$ . This is the absolute unit of force, and this definition of it is implied in every equation in Dynamics. ...But for many purposes of physical reasoning, as distinguished from calculation, it is desirable to avoid explicitly introducing Cartesian coordinates, and to fix the mind at once on a point of space instead of its three [rectilinear] coordinates, and on the magnitude and direction of a force instead of its three components. This mode of contemplating [curvilinear] geometrical and physical quantities is more primitive [tangible] and more natural than the other, although the ideas connected with it did not receive their full development till Hamilton made the next great step in dealing with the space, by the invention of the Calculus of Quaternions. ... The geometrical nature of the relation between the potential and the vector thus derived from it receives great light from Hamilton’s discovery of the form of the operator  $[\nabla]$  by which the vector is derived from the potential. ... One of the most remarkable properties of the operator  $\nabla$  is that when repeated it becomes  $\nabla^2$  an operator occurring in all parts of physics which we may refer to as Laplace’s Operator. This operator is itself essentially scalar. When it acts on a scalar function the result is scalar, when it acts on a vector function the result is a vector.

If with any point  $P$  as centre, we draw a small sphere whose radius is  $r$ , then if  $q_0$  is the value of  $q$  at the center and  $\bar{q}$  the mean value of  $q$  for all points within the sphere,

$$q_0 - \bar{q} = \frac{1}{10} r^2 \nabla^2 q ;$$

So that the value at the center exceeds or falls short of the mean value according as  $\nabla^2 q$  is positive or negative.”

Today, it is interesting and unfortunate to note that economic advantage is still able to be secured by allowing the introduction of energy uncertainty into AC power generation, voltage regulation and energy metering by measuring *only* the mean value of alternating voltage and current (AAV), even though the effective—i.e., RMS—value can vary by ‘ **$\pm 10\%$  as  $\nabla^2 q$  is positive or negative**’ due to the ever-present ferromagnetic harmonics and conductive surge impedance. It has become accepted practice over time to replace costly RMS instruments with cheap AAV substitutes thereby concealing the 20% energy uncertainty. And, worse yet, with AAV energy regulation the resulting 10% average energy boost increases burnouts and wastes fuel, an irreconcilable burden for the uninformed public. This ethical problem surfaced shortly after Heaviside reduced Maxwell’s twenty quaternion equations and over-simplified his original twenty unknowns to just four ordinary equations with four unknowns based on the rectified AAV measurement, use of elementary mathematics and the limiting assumption of pure sinewave functions. These assumptions have subsequently been codified incorrectly in common understanding as Maxwell’s equations, even though they really are Heaviside’s approximations which contain severe limitations never imposed nor intended by Maxwell. Still, as simplified as they are, even these four equations represent a challenge to non-mathematicians, so further efforts were required to bring EMF and MMF concepts within the grasp of wider audiences as energy use—and with it, AC power installation, voltage regulation and energy measurement—was becoming ubiquitous at the turn of the 20<sup>th</sup> Century.

At this time, the nascent electric and electronic industries were finding the complexities of Gaussian measurement and even the over-simplified Heaviside relationships (erroneously called Maxwell’s equations) a formidable challenge. There also were inconsistent definitions of electromagnetic terms in use internationally so there was a compelling need for uniform and simpler, if less accurate, approaches to facilitate development of electromedicine, radio and, especially, electrical power applications. So, when in 1901, at the Associazione Elettrotecnica Italiana conference, an Italian engineer and scientist, Giovanni Giorgi,

introduced a plan to replace Maxwell's true equations and the absolute CGS Gaussian (electro-magnetic-unitary coupled, reciprocally symmetric) metrics with a completely disconnected *asymmetric*-electromagnetic metric system, there was a receptive, willing international audience. Giorgi proposed using a metric that was **100,000 times courser grained**, a meter, kilogram, and second metric (MKS), for physical standards while adding a fourth "physical" unit for electricity, the ampere, which, under certain assumptions, could be manipulated in a simplified manner using classical algebraic equations that required only commuting numerics. Giorgi was striving both for a system with strictly physical units or concepts (easier to comprehend) and for a system that could use the elementary mathematics familiar to most tradesmen. He thought that this could be done in a theoretically sound manner simply by making two assumptions: assuming a state of thermodynamic equilibrium and assuming pure sine waves for all the AC relationships then in question.

The assumption of thermodynamic equilibrium was indeed a critical, if fateful, step to simplifying measurement and the manipulation of electromagnetic phenomena. The assumption was critical in three ways. First, assuming thermodynamic equilibrium enables electromagnetism to be expressed entirely in physical terms. This is because in this constrained state, EMF field energy dwarfs MMF field energy by a factor of 377 to one—a factor so large that MMF field energy can be largely ignored. This seemed a step forward because EMF field energy is associated with a physical particle, the electron, which is susceptible to definition in physical terms, while MMF field has no physical particle or counterpart and, as such, cannot be pinned down in easily comprehensible physical terms. Second, it is only at thermodynamic equilibrium that its notorious second law concerning irreversible entropy increase *always* applies. This was helpful because if the entropy cannot be reversed (and therefore doesn't need to be included in the equations), energy measurement becomes much simpler. Third, and most importantly, by suppressing the multidimensionality of the energies involved and related time dimensions and by imposing the second law of equilibrium thermodynamics, the variable  $c$  in Maxwell's equations, which is actually the speed of electromagnetic *propagation*, becomes instead a *constant* as defined by the now simplified thermodynamic speed of light.



Given the introduction of unidimensionality and a constant speed of light (at thermodynamic equilibrium), the mathematics of electricity is thereby reduced to four simple relationships, which are then easily further reduced to tables and manipulated with slide rules by journeyman electricians, electrical engineers and medical researchers. These assumptions also facilitated the adoption of international standard units of measurement for electric potential, current velocity, and elementary resistance (the International Volt, International Ampere, and International Ohm, respectively)—all being defined within the limited and special confines of thermodynamic equilibrium. Also with Giorgi's 100,000 x coarser-grained MKS *practical* metric in place of the fine-grained CGS *absolute* metric, errors caused by flaws inherent in his system, some of which are described below, have smaller raw numbers—small enough to be ignored by most practitioners in the various fields.

However, by the nature of its assumptions, Giorgi's system was not reciprocally symmetric, and therefore inherently *incapable of accurate analysis* of the far-from-equilibrium adiabatic processes, of which there are many. (All biological organisms, for example, exist in far-from-equilibrium thermodynamic states.)

Ironically, one of these exceptions to thermodynamic equilibrium exists in fact at the very heart of Giorgi's system and created an error which cropped up immediately in Giorgi's efforts to define measurement units for various aspects of electromagnetism in physical terms. According to Absolute Measurements in Electricity and Magnetism, Dover Publications, Inc., 1967, LCC card #67, (pg. 29-30):

*"The specification here quoted... was recommended for adoption by the International Congress of Electricians held at London in 1908. The ampere is defined for practical purposes of measurement and reproduction by means of electrolysis. Thus, in the Order in Council already quoted, the International Ampere is defined as 'the unvarying electric current which, when passed through a solution of nitrate of silver in water, deposits silver at the rate of 0.0011180 of a gramme per second.' The Order in Council also defines the international Volt as the difference of potential 'which, when*

*steadily applied to a conductor whose resistance is one International Ohm, will produce a current of one International Ampere.’ The amount of electricity conveyed in one second by a current of one ampere is called one coulomb.” [Emphasis added.]*

Thus, the ampere was made the cornerstone unit upon which the other definitions depend, with the interdependent set of definitions seeming to comprise a consistent system. However, it must be noted at the outset that this definition of a unit of electric current, and hence the entire system, is inconsistent with Giorgi’s own theoretical analysis. The rate of silver deposit codified in the International Ampere definition, i.e. 0.0011180 g/s (or 1.1180 mg/s) of silver, is measurably larger than the rate predicted by Giorgi’s equations. Using the pure sinewave ratio of 1.1111... for rectified AAV current to equal the effective RMS current, the Coulomb deposit rate for silver should be 1.1111... mg/s, not 0.62% larger than the ampere rate measured using an absolute (electrothermic) calorimeter. When the Coulomb rate of 1.1180 mg/s was found in actual experiments, this rate that was then adopted (in place of the RMS ampere rate actually measured) as *close enough* for commerce that assumed pure sinewave AC.

What is the root of the difficulty here? The inconsistency between what was found experimentally and what is predicted by Giorgi’s RMS-to-AAV sinewave equations is attributable to the fact that electrolysis and the quantity of electricity conveyed in one second by electrolysis involves chemistry and its reversible atomic-time. Here, the second law of equilibrium thermodynamics is erroneous and c is not a constant. The 0.62% excess in the actual findings represents the adiabatic energy surplus and cold-fusion energy gain—a gain which was tacitly glossed over at the time by pragmatists focused on forcing Gauss’s distinctly different RMS ampere into what amounts to a fraudulent system of rectified AAV, for the so-called Coulomb measurement. Over the years that have followed, this clear violation of basic scientific principles has been largely forgotten. Worse, untrue states of thermodynamic equilibrium, positive entropy flow, pure sinewave AC, and unvarying DC all have entered a hallowed state of dogmatic acceptance as the received platform for all analysis and measurement standards; and in present times, now more than 100

years after adoption, this acceptance still largely prevails in many areas of physics, electrical engineering and electromedicine.

In marked contrast and despite its apparent acceptability for the commercial purposes of the electrical power and electronic application, the 0.62% atomic time energy surplus embedded in today's MKS metric system has proven to be far too large to be acceptable in chemistry, atomic physics, and quantum mechanics. The full implications of the Giorgi-Heaviside forced rationalization of the multidimensional Gauss-Hamilton-Maxwell system into a simplified, unidimensional, flawed system are too vast for the scope of this paper.<sup>ii</sup>, <sup>iii</sup> For illustration, we touch on only two areas: 1. AC measurement for power system control; and 2. Research on biological systems and Electromedicine.

Unfortunately, given its widespread acceptance and use, there is still no law requiring disclosure of the assumptions underlying AC measurement accuracy certifications so that the ultimate instrument user has some warning that "Certified Accurate" AC instrument readings can actually be >20% *uncertain*. Consequently, users are under the assumption that there is a level of precision which in fact does not exist. Such deception plays into the hands of profit-driven manufacturers of all kinds of devices and leads to a significant waste of energy at a time when energy conservation is acutely important for the survival of our planet. Manufacturers of AC switch boards, generators, and voltage regulators have been able to use far less costly AAV sensors for generator voltage regulation and marry them with similarly deceptive switchboard meters to conceal dangerous deficiencies inherent in the far more profitable, extremely high surge impedance copper windings used in such AC electrical power systems. With such systems, typical form and crest factor effects due to AAV voltage regulation produces ~10% RMS over voltage that wastes energy and has been shown by the IES (Illuminating Engineers Society) to double the failure rate of light bulbs, costly microwave and other electron-emitting vacuum tubes, a preventable expense and environmental wastage.

Turning to the fields of biology and Electromedicine, it has been found that in reducing a complex biological system to a simpler

model for easier calculation, one can quickly lose sight of the consecutiveness of the system, and thereby misunderstand and, worse, misrepresent the complexity inherent in the web of life. Heisenberg stressed that everything is connected to everything else. In particular, health phenomena cannot be properly conceptualized in a reduced model, and when they are, then significant opportunities for invoking healing options are missed. This is especially true, both in understanding and in practice, in the oversimplification currently enduring in Electromedicine. More recently, Hans-Peter Dürr, Director Emeritus Max Planck Institute for Physics, pointed out that "systems cannot be reduced to simpler systems without rupturing some links, the weakest effect can lead to entirely different developments."<sup>iv</sup> Dürr has shown that biological systems consist of a non-polar electrical medium having an electrical dipole moment fed by metabolic processes surrounded by water.<sup>v</sup> "These components have relatively large dipole moments where dipole interaction creates an alignment between the components due to symmetry breaking." A.S. Davydov identifies such component symmetry breaking as biological Solitons. "Electrical *alternating current* inherent in the oscillation of Solitons induces a corresponding electromagnetic alternating field, which excites the surrounding water to resonate through displacement. Therefore, classical structures can occur in the form, for example, of Bose-Einstein condensates of infinitely many quanta in the ground state (spontaneous breaking, Solitons, etc.). ...The rotational symmetry and the charge-spacing symmetry in the substrate are also broken, causing low energy Goldstone modes to occur in it (not only in the Bloch-equivalent spin-wave modes, but also an oscillation mode.) The symmetry breaking also results in a shielding of the Coulomb field, by the Anderson-Higgs-Kibble mechanism. This makes a transition to what is called 'Frohlich regimes' possible, in which the biological chain molecules resonate coherently with water-dipoles, and are supplied with energy by a surrounding non-polar heat bath."<sup>vi</sup> In other words, understanding the complexity of reality and perceiving what is actually happening in a living system, ultimately depends on truthful EMF and MMF electric measurement.

Quantum theorist Vigier and quantum biologist Chebotarev write of microscopic objects exhibiting a dual wave-particle nature composed of a particle in the proper sense of the word (a small region in space with a high concentration of energy) and of an associated wave that guides the particle's motion. Both the particle

and the wave are considered to be real, physically observable, and objectively existing entities. Particles are pictured as oscillators (or Solitons) beating in phase with their surrounding pilot wave, which in turn results from the superposition of superluminal phase waves carried by a subquantal medium subject to constant stochastic fluctuations. *"The force, or quantum potential, determining particle motions, therefore carries information from the entire environment, accounting for the 'wholeness' of quantum phenomena."*<sup>vii</sup> The above, succinctly stated essence of long-range angular momentum spin-vector quantum entanglement became the driving force that led quantum mechanical researchers long ago to revert back to true, reciprocally symmetric, electromagnetic fundamentals. Like Maxwell, they had to employ non-commuting mathematics in order to manipulate physically observable and objectively existing entities that have energy and time multidimensionality. The mathematics are more complex, and so is the picture of reality that is able to be represented.

In the field of medicine, research into the effects of electromagnetic influences on healing and biological changes has been greatly impeded by continued use of the oversimplified Giorgi-Heaviside MKS metric system and its limiting assumptions. In fact, because of this, researchers in medicine are often looking at the wrong model, and thinking about it in the wrong way. As far back as the opening of the 20th Century Nikola Tesla applied for patents on a Magnifying Transmitter that suppressed light-speed-limited, transverse Hertzian waves to create non-dispersing, faster-than-light, longitudinal-mode Solitons. If the speed of light were truly invariant, it would have precluded this faster-than-light longitudinal wave mode. Light speed invariance is also inconsistent with present-day use of the nonlinear electric permittivity of atmospheric water and earth resonance magnetic permeability to give biological organisms healing information—a practice that challenges prevailing assumptions about the irreversibility of disease.<sup>viii</sup> At the very least, the general presumption of the invariant speed of light has inhibited acceptance of and advancements on Tesla's Magnifying Transmitter and its earth resonance links to health, and precluded how many more discoveries.<sup>ix</sup>

More broadly, Orest Bedrij in his paper "New Relationships and Measurements for Gravity Physics" states: "Symmetry is a very useful tool in the group theoretical physics. It has been suggested by many authors, for example, Lie, Lorenz, Einstein, Poincare, Batement, Cunningham, and Rainich, that the symmetries of Maxwell and Dirac equations, and super symmetry multiplets of Weinberg, and other differential equations of quantum mechanics, produce immensely valuable fundamental results. We suggest that, in addition to other approaches, symmetries (in particular group symmetries) be integrated with fundamental constants and the laws of physics in scale-invariant relationships. This would provide a very effective phenomenological means to: 1) discover new phenomena; and, 2) formulate, verify, and elucidate the foundation of physics and astrophysics in general and in particular the broad range nature of gravitation." <sup>x</sup> This understanding allows us to move forward using truth, accuracy, and rigor in measurement which gives us truer representations of reality in our modeling and in our thought processes.

In summary, at various levels of industrial practice, in scientific research, and in the halls of academe, we still live with the effects of the thought-limiting, turn-of-the-20th-Century efforts by Giorgi, Heaviside and other pragmatists to simplify electromagnetism with assumptions that blind us to the *required* 50% energy waste imposed by accepting the Maximum Energy Transfer Theorem's limitation. Today's SI-approved, Giorgi-Heaviside limited MKS metric system is based on light-speed invariance as a *primary standard* and continues to justify this restriction by invoking thermodynamic equilibrium, which *also* provides only for the pure sine wave, transverse electromagnetic mode where light velocity,  $c$ , is invariant. This is accomplished by specifying conditions such that the EMF field will be 377 times stronger than the MMF field. This imposed condition is *assumed* to prevail without regard for the reality of an actual nonlinear, energy-density-dependent, aerial medium. We know from Maxwell's quaternion equations that in far-from-equilibrium conditions  $c$  is a variable and MMF field energy is governed by reversible entropy flow—complicating factors that are too major to be ignored any longer for convenience in a world so dependent on sophisticated electromagnetic devices and the true forces behind them.

The conditions of ignorance, neglect, and glossed-over error prevail even though many experiments based on parametric energy-density effects in aerial and solid-state mediums show that  $c$  decidedly is variant.<sup>xi</sup> It is time to release the shackles on our thought processes and purge the errors in our measurements that have dogged physics, medicine and electromagnetic research for the past 100 years. The early development of our electrical and electronic industries may have benefited from the Giorgi-Heaviside MKS metric simplifications, but we are well past that era. We never should have let those expedients blind us to the truth and thereby block our ability to understand the full dimensions of electromagnetism and far-from-equilibrium thermodynamic processes. We were far closer to a true understanding of electromagnetism in the late 19th Century than we are today. We cannot reverse those events embedded in a pragmatic, dynamical time. However, we can at least bring back to the mainstream those earlier systems for a more enlightened and unfettered 21st Century. If we do, we will perceive and hopefully come to understand a world much closer to how it truly is: dynamic and complex and astounding.

---

<sup>i</sup> See "Violation of Time Reversal Invariance in Living Tissue," US Patent 6,592,611

<sup>ii</sup> See Stopes-Roe, H.V. Essential Failure of Giorgi systems of Electromagnetism, and a Basic Error by Sommerfeld. *Nature*. Vol. 224 p. 579-581. 1969 "There are also systems which have practical significance. There are also systems of equations, which are not of the Giorgi form, but which are appropriate for use with SI units, namely the SI-Gaussian and SI-Electric. It is the purpose of this communication is to show that the Giorgi conditions leads essentially to confusion and in practice to error." Stopes-Roe reference is to Sommerfeld, A. *Lectures on Theoretical Physics: III Electrodynamics*. Academic Press, N.Y. 1952.

<sup>iii</sup> See also Rosser, W.G.V. Four Macroscopic Vectors of Electromagnetism. *Nature*. Vol. 224 p. 577-579. 1969 and McCaig, M. Giorgi System. P.935-936. 1970.

<sup>iv</sup> Hans-Peter Durr. Sheldrake's Idea From the Perspective of Modern Physics. Vol, 16, No. 1 *Frontier Perspectives*. The Center for Frontier Science at Temple University, 2007.

<sup>v</sup> Del Giudice, E., Doglia, S., Milani, M., and Vitiello, G. (1988) "Structure, Correlations and Electromagnetic Interactions in Living Matter": theory and applications, In H. Frohlich (Ed.), "Biological Coherence and Response to External Stimuli", Berlin Springer.

<sup>vi</sup> Davydov, A. S. (1979), "Solitons in molecular systems", *Physica Scripta* 20, 1987.

<sup>vii</sup> "Jean-Pierre Vigié and the Stochastic Interpretation of Quantum Mechanics", edited by Stanley Jeffers, Bo Lehnert, Nils Abramson, and Leve Chebotarev, Montreal: Apeiron, 2000. vi 291 pp.

<sup>viii</sup> See "The Difficult Progression of Electromedicine and an Explanation of the Mechanism by Which It Works", Alexis G. Obolensky, Phillip Shinnick and Charles Cathcart, 2008, in press.

<sup>ix</sup> See "Columbic, Gaussian and Photonic Measurements for Electromagnetic Therapy and Links in the Biochemical Processes of Neutrophils to the Schumann Resonance", Alexis Guy Obolensky, Phillip Shinnick and Jack Haddad, 2008, in press.

<sup>x</sup> Orest Bedrij, "Proceedings of Institute of Mathematics of NAS of Ukraine, Vol, 43, Part 2, 589.

<sup>xi</sup> See Ecole Polytechnique Federale de Lausanne. Public Release 41-21-693-4774, Aug 2005. A team of researchers from the Ecole Polytechnique de Lausanne has successfully demonstrated, for the first



---

time, that it is possible to control the speed of light-both slowing it down and speeding it up in an optical fiber, using off-the-shelf instrumentation in normal environmental conditions. For another recent example, see “Wizardry at Harvard: Physicists Move Light,” Feb. 8, 2007, by Kenneth Chang (NYT) National Desk; for the science behind this examples, see Ginsberg, Garner and Hau (8 February 2007). "Coherent control of optical information with matter wave dynamics". Nature 445: 623–626.doi:10.1038/nature05493.  
<http://www.nature.com/nature/journal/v445/n7128/abs/nature05493.html>.

## **Mechanics of Time, Revisited<sup>©</sup>**

**Alexis Guy Obolensky**

### **OVERVIEW**

In this paper, we revisit the 1988 “Mechanics of Time” paper and expand upon its conclusions. We explain the unfortunate 1908 revision to the Gauss-Maxwell electric/magnetic reciprocal- symmetry required for absolute measurement. Absolute measurement symmetry properly includes both scalar and pseudoscalar numerics to resolve the complexity of the mass-coupled electric and the mass-less magnetic energy dimensions of electromagnetic light-wave vibrations. We resurrect the importance of the mass-less magnetic spin-vector to introduce entropy reversibility which can circumvent the “fatal” Second Law of Thermodynamics. We connect Nikola Tesla’s description of etheric “force” to phase-conjugate energy-resonance and the principles of force amplification by stimulated energy-resonance (faser) to explain the connections to absolute motion, the Great Attractor, and Kozyrev’s universal constants  $C_1$  and  $C_2$ . We conclude by drawing on this background to explain how causality-triangle-simultaneity measurement confirms superluminal velocity in experiments by the author that repeatedly produce over 200% energy gain. This reinforces our discussion of the Maxwell *variable one-way* light speed  $c$  and Kozyrev’s *invariant round-trip* light speed  $C_1$  which is needed to understand absolute motion, the ultimate Body Alpha reference frame, and the importance of geometric phase and soliton structure in the further development of the author’s FASER<sup>®</sup> technology.

### **INTRODUCTION**

At the 1988 International Tesla Symposium, the author first demonstrated how, under the right conditions, absolute measurements prove that superluminal

---

shockwaves unlock the reversible-entropy associated with phase-conjugated light. Einstein's caveat, *special*, was appropriate for his relativity theory as it ignored the electron's mass-less magnetic-spin vector and its time-reversed entropy, the "Achilles Heel" of the Second Law of Thermodynamics, which supports the fact that absolute motion can only be revealed with absolute one-way light speed measurements. Maxwell had identified the *variable* one-way speed of light  $c$  in his system of quaternion equations that reveals why a *round-trip* invariant speed of light introduces thermodynamic equilibrium.

*Special* Relativity Theory, as taught today worldwide, allegedly proves: (1) the impossibility of absolute motion, (2) the equivalence of all inertial reference frames, and (3) the equivalence of the speed of light in all such frames. Albert Einstein stated it thusly:

*"The laws of physics could be expressed even in the case [where] there were a unique direction in space in such a way as to be co-variant; but such an expression would in this case [Special Relativity] be unsuitable. ... The theory of relativity is often criticized for giving, without justification, a central theoretical role to the propagation of light, in that it founds the concept of time upon the propagation of light. ... Processes of some kind are required which enable relations to be established between different places. ... It is immaterial what kind of process one chooses for such a definition of time."<sup>xi</sup> (Emphasis added.)*

Einstein's invariant-light-speed postulate rested upon the supposed isotropy and homogeneity of space as deduced from the *initial* Michelson-Morley *round-trip-light* experiment. However, this experiment, on which Einstein based his postulates, was inherently flawed.

To paraphrase a 1972 Science article by J. C. Hafele & R. E. Keating:

Commercial jets carrying atomic clocks circumnavigated east to west and west to east to test whether Einstein's *assumed* rectilinear (sine/cosine circular) atomic electron orbits would be independent of the Earth's absolute rotation. However, the Earth's rotation introduces a one-way energy gradient in its electromagnetic field that apparently causes atomic clocks that circumnavigate westward to run an average of 273 ns/s faster than similar reference clocks at rest on the Earth. Airborne clocks that circumnavigate eastward, against the absolute motion of the spinning Earth, ran an average of 59 n/s slower.<sup>xi</sup>

In 1983, Physics Today published the B. G. Wallace paper stating:

---

*"Over twenty-three years have gone by since the original Venus radar experiments clearly showed that the speed of light in space was not constant, and still the average scientist is not aware of this fact."*<sup>xi</sup> We know, of course, that the measured transit of light from point A to point B through space is one-way.

The 1984 Quantum Electrodynamics Journal article titled "Ring Lasers" by J.R. Wilkinson states:

*"The detection of rotation by the use of a closed optical circuit is a concept, which dates back to the early part of the twentieth century. In fact, the Michelson-Morley experiment of 1887 was an attempt to sense the rotation of the Earth using the velocity of light, and thus to demonstrate motion relative to the ether. The very significant failure of this experiment [to detect rotation] was due to the use of a linear, rather than circular interferometer. Correctly performed, an optical experiment is capable of measuring absolute rotation and, interestingly, appears to confirm the existence of an ether."*<sup>xi</sup>

In an April 1986 Scientific American article titled "Optical Gyroscopes," D.Z. Anderson states:

*"The amount of time required by light to traverse a circular pathway depends on whether the pathway is stationary or rotating. The time difference can serve as a measure of the amount of rotation."*<sup>xi</sup>

The 1984 NBS Publication 617, Precision Measurement and Fundamental Constants II, states:

*"The uncertainty introduced by assuming Einstein's homogeneity of wavelength and propagation velocity, was investigated using a frequency of 5 MHz to excite a 500 meter long coaxial transmission line. Exacting one-way velocity tests demonstrated variations in the assumed invariant-speed of light amounting to 8 ns/Hz or 0.04 wavelength."*<sup>xi</sup>

One exception to the almost universal adherence to Einstein's Special (incomplete and yet assumed valid) Relativity Theory occurred at NASA after its Venus radar ranging experiments in the early 1960's revealed errors introduced by *assuming the validity* of Einstein's Special "isotropic and homogeneous"

---

space postulate. Thereafter, NASA relied upon both scalar and pseudoscalar measurement processes in the instruments used to capture one-way-signal transit time in solar system orbits.<sup>xi</sup>

## BACKGROUND

The renowned German mathematician, physicist, and astronomer, Carl Friedrich Gauss, created a system to express the reciprocal-symmetry connecting the positive entropy of electric charge with the positive or negative entropy of magnetic charge. This system used fine-grained centimeter-gram-second (CGS) dimensions. More importantly, to assure absolute (reciprocally-symmetric) electromagnetic measurement, Gauss had to employ dimensionally incompatible electrostatic and electromagnetic numbers. Because electric permittivity dimensions involve square-law-scaled numbers and magnetic permeability dimensions involve linear-scaled numbers, their respective angular momentum torques can only be in absolute balance where each energy field has a unit-value-dimensioned numeric. This explicitly revealed the parametric *energy-density-dependence* of the *reciprocal-symmetry* needed to balance the *torsion* field energy connecting mass-coupled *electric* and mass-less *magnetic* angular momentums.

Only root-mean-square (RMS) scalar numbers describe the *irreversible* positive entropy associated with the Second Law of Thermodynamics. Average-value (AV) *pseudoscalar* numbers describe the *reversible* (positive or negative) entropy produced by reversing the 'arrow of time' with magnetic spin-vector inversion. The AC wave average value is by definition zero because it averages alternating positive and negative wave information. AC wave rectification yields absolute-average-value (AAV) pseudoscalar numerics with which the ratio to scalar numerics is a measurement of the AC harmonic form factor. If this AC wave traverses an energy-density-dependent impedance, it can exhibit soliton statistics with a sharp half-cycle peak followed by a blunt half-cycle trough, analogous to ocean wave hydrodynamics. Wave velocity is faster for the peak half-cycle and slower for the trough half-cycle. (This important point is best illustrated in the following excerpt from E.W. Silvertooth's comments presented more fully on page 8.) "*If the troughs and peaks are co-moving [as with this ocean wave analogy] and if  $c$  (the speed of light) changes, then the half-cycle wavelength  $\lambda$  must also change. The frequency  $\nu$  cannot change as this would result in a continuous increase or diminution of the number of waves in the path, a circumstance in conflict with thermodynamics.*" Stated differently, the Gauss-Maxwell electrodynamics recognized that the energy-density-gradient changes a uniform AC wave into a peak and trough soliton-like wave. Therefore, one-way light speed variance and round-trip invariance must coexist, as provided for in Maxwell's variable light speed  $\mathbf{c}$ .

---

When Albert Michelson realized that his forward and back (rectilinear) interferometer canceled the (curvilinear) one-way velocity change, his subsequent circular interferometer experiment (conducted with Henry Gale) conclusively demonstrated the reality of absolute motion. But experimental proof could not overturn received doctrine, based to this day on *Special* Relativity postulates, that continues to ignore NBS Publication 617. The National Bureau of Standards conclusively proved that even a simple co-axial transmission line can reveal absolute motion because the CGS Gaussian absolute measurement is founded on irrefutable electromagnetic *reciprocal-symmetry* that explicitly reveals the energy-density-dependent variance of electric permittivity and magnetic permeability.

The New Dictionary of Physics explains:

*"(a) CGS-electromagnetic units are based on the permeability of free space having unit size. (b) CGS-electrostatic units are based on the permittivity of free space having unit size. The Gaussian (or symmetric) system of units uses units from system (a) to measure magnetic quantities and those from system (b) to measure electric quantities. In consequence, some equations of electromagnetic relationships contain c explicitly."* <sup>xi</sup>

Maxwell employed quaternion calculus to fully implement Gauss' reciprocally-symmetric measurement numerics. Scalar numbers are unique in that they can describe gravitating mass-energy associated with the charged electron's *rectilinear* (sine/cosine) momentum. More complexity arises with *curvilinear* momentum and pseudoscalar numbers. The electron's *intrinsic* spin-angular-momentum entropic-polarity depends on the 'arrow of time', itself determined by the gravity-free (*etheric*) magnetic-spin vector. In other words, the direction of time (*entropic polarity*) is *irreversible* for mass-coupled electric charge measured using scalar numeric instruments. It is *reversible* for the mass-free magnetic charge measured using pseudoscalar numeric instruments. Now the dimensional difference can be recognized as such for measurement understanding and accuracy. Only absolute (reciprocally-symmetric) energy numerics address this complexity by expressing both the irreversible entropy associated with mass-coupled angular-momentum and the reversible entropy associated with mass-free (intrinsic) angular-momentum. In point of fact, only the intrinsic (*etheric*) magnetic-spin-vector can determine the reversible polarity of entropy flow which is the very essence of phase-conjugation.

Astrophysicist Nikolai Aleksandrovich Kozyrev's experimental study of time and causality began long after Einstein's theory had become received doctrine. Fortunately Kozyrev was free to dismiss institutionalized doctrine and return to the Gauss-Maxwell electrodynamics to insure that his experimental findings would accurately connect cosmology and absolute motion with Gauss-Maxwell electromagnetic symmetry. It is this symmetry that binds the mass-coupled

---

gravitation of electric charge and the etheric spin of magnetic charge to the time honored Body Alpha concept in cosmology. Unfortunately, the more advanced Gauss-Maxwell mass-less and mass-coupled symmetry connection has been overlooked or dismissed by almost everyone since *Special* Relativity was institutionalized as received doctrine.

## **How Institutionalized Measurement Error became New Law in 1908.**

Andrew Gray's book, *Absolute Measurements in Electricity and Magnetism*, Chapter XVI titled "Comparison of Units," relates on page 664 that Maxwell constructed a unique torsion balance to physically test CGS Gaussian reciprocal symmetry. Maxwell compared the magnetic force-field produced by a unit Ampere of electric current with the electric force-field produced by a unit Volt of electric potential. At the beginning of the same chapter, on page 652, Gray stated:

*"The experimental comparison of the ordinary electrostatic and electromagnetic units of an electrical quantity is of great importance in the electromagnetic theory of light, as it enables the velocity of propagation, according to that theory, of an electromagnetic disturbance to be determined numerically, and compared with the observed velocity of light, which is set forth in his [Maxwell's] celebrated essay on that subject."*<sup>xi</sup>  
(Emphasis added.)

Gray also identifies how and when the 'practical' International meter-kilogram-second (MKS) metric system, which purported to address both AC and DC phenomena, eliminated the tools necessary for handling the greater complexity of AC phenomena--tools previously incorporated in the then well established (absolute symmetric) CGS metric system. Chapter I, titled "Units and Dimensions of Physical Quantities," states, on page 29:

*"The specification here quoted from the Order in Council is that of what is called the International Ohm, which, with the International Ampere and the International Volt, was recommended for adoption by the International Congress of Electricians held at London in **1908**.*

*It is Ohm's law that [if] the difference of potential  $V$  between two points in a homogeneous wire which is **at rest in a magnetic field**, be altered in any ratio, the current in the wire will be altered in the same ratio. **If  $V$  be 1 Volt ( $10^8$  c.g.s. units of potential) and  $R$  be 1 Ohm ( $10^9$  c.g.s. units***

---

**of resistance) the current will be 1/10 of 1 c.g.s. unit of current, and called one Ampere.**<sup>xi</sup> (Emphasis added.)

The (Ohm's law) phrase and sentences above clearly show the AC-wave-theory inconsistency introduced by eliminating CGS electromagnetic *symmetry* to adopt the 1908 MKS electromagnetic *asymmetry*. The CGS Gaussian (reciprocally-symmetric electric and magnetic) system had addressed the complications introduced by a varying magnetic field and not addressed by Ohm's law and its simplistic DC measurement. Here, AC measurement is *only addressed by Ohm's law under the condition that it is at rest in a magnetic field*. The international CGS metric system's absolute symmetry required that all three central standard units (Ohms, Volts, and Amperes) converge at unity to be internally self-consistent.

Of paramount importance to the scientific community was the fact that this MKS Georgi revision effectively *sidelined AC wave theory* and the *essential permittivity and permeability* of electromagnetic phenomena by limiting relationships to measurement under the stated "**at rest in a magnetic field**" condition. This completely concealed the measurement uncertainty introduced by *Heaviside's elimination of the SU(2) symmetry* in Maxwell's quaternion equations. Heaviside's algebraic reductions are nevertheless erroneously identified as *The Maxwell Equations in all modern textbooks*. Popular explanations of the Heaviside reduction of Maxwell's 20 quaternion-calculus equations to 4 vector-algebra equations in x-y-z (Cartesian rectilinear-coordinates) claim that Maxwell's overly cumbersome equations in x-y-z (Cartesian curvilinear expression) were 'effectively the same' as the reduced x-y-z equations in use today.

To truly understand the distinction between the 20 Maxwell quaternion equations and the 4 Heaviside algebraic equation reductions, one must understand that Maxwell's quaternion calculus was far more subtle. For example, it appears that the Magnetic Vector Potential was at the core of Maxwell's insight, and his equation for Ampere's law related magnetic potential to magnetic force field intensity and also made a clear distinction of the 2 forms of magnetic induction. Furthermore, quaternion calculus is a superset of complex numbers and therefore has far more structure requiring 20 quaternion equations to unite electromagnetic pseudoscalar AV and AAV numbers with electrostatic RMS (true scalar) numbers. Both types of energy-**force**-field measuring instruments are required for absolute measurement.

Before moving on, it may be helpful to learn that Maxwell's 20 equations (needed to resolve all the then apparent electromagnetic relationships) offers a perfect foundation for further development, while the Heaviside reduction does not. The 4 Heaviside equations are known to be of a symmetry classification from the mathematical Group Theory type U(1) transformation, whereas the 20



---

equations in Maxwell's theory bear the group symmetry structure of the SU(2) group of transformations---a higher classification with enhanced mathematical structure. Such symmetry and structure create new avenues for solutions in the range of complex behavior.

As an example, the mathematical structure of soliton equations, originally associated with fluid dynamics, now has practical applications in electromagnetic phenomena. Recent demonstrations show that both the non-linear Schrödinger equation and the Korteweg-DeVries (KDV) soliton equations are reductions of the self-dual Yang-Mills equation from electrodynamics. Both of these equations introduce solitons as viable solutions and are pivotal in understanding a need for the extension of Heaviside's U(1) theory to higher order symmetry forms such as the Maxwell SU(2) equations.

Concurrent in this period of history, Giovanni Giorgi was also determined to implement a new '*commercially convenient*' measurement system, capitalizing on the Einstein doctrine and the Heaviside vector algebra, in order to justify the limitation of measurement for economic, not scientific needs. To reiterate, the complex Gauss-Maxwell quaternion equations are the required foundation for understanding and measuring absolute motion through the use of scalar instrument numbers for round-trip (*invariant*) light speed measurements, and pseudoscalar instrument numbers for one-way (*variant*) light speed measurements.

The MKS Giorgi metric system misdirection has prevented absolute motion from being explained in experimentally verifiable light velocity terms for over a century. Today's institutionalized textbooks only teach the U(1) Standard Model with its *invariant round-trip* speed of light and *assumed constant* of 377 Ohm vacuum impedance that conceals the *variant one-way* speed of light. By so obscuring the true *energy-density-dependent* permittivity and permeability required to produce the *variable* vacuum impedance gradient, the absolute-motion-induced one-way light speed variance is undetectable.

## **The Received U(1) Doctrine Has Sidetracked True Science.**

By 1984, the US National Bureau of Standards Publication 617 finally had to acknowledge the errors imbedded in the U(1) received doctrine that to this day still ignores the Gauss-Maxwell SU(2) symmetry, notwithstanding the fact that the institutionalized *exclusion of absolute motion* surfaced as an instrument-accuracy certification problem. NBS continued to only provide ¼% accuracy certificates despite the extreme precision of AC Volt, Ampere Watt, magnetic-field and wave-velocity measuring instruments. This is no surprise as the

---

*absolute CGS Gaussian* electric and magnetic symmetry consistently reveals the ¼% light speed variability in the ambient medium's impedance gradient due to the now recognized cosmic streaming velocity,  $C_2$ .

For electron orbital wave lengths, each half-cycle rotation can have a different mean velocity because the energy-density-dependent vacuum impedance creates orbital eccentricity. This makes the observed  $C_1/c$  ratio appear correlated to the *gyromagnetic anomaly* in the absolute motion *energy-density-gradient of a preferred reference frame*. Received doctrine claims that the vacuum impedance is invariant, whereas numerous electromagnetic shockwave experiments by the author have shown that it is clearly *energy-density-dependent*. This dependency determines the  $C_1/c$  ratio by altering the one-way impedance, not round-trip-average impedance. The one-way velocity differential introduced by a variable impedance gradient changes the geometric phase.<sup>xi</sup> Therefore, electromagnetic energy can be manipulated to ensure that positive entropy flow will be *canceled* by negative entropy flow.

## The More Advanced SU(2) Symmetry

The Earth's gravity and rotation establish a preferred reference frame for absolute motion entrainment. Consider that water when flowing is reducing its potential in both linear and angular momentum energy-density-gradients. It appears that Tesla's earth-electron analogy encouraged him to harness the cosmic energy absolute motion energy-density-gradient. The scientific principles and advanced mathematics needed, in Tesla's own words, to **"harness the very wheelwork of nature,"** already existed given that electromagnetic symmetry and absolute motion had been clearly set forth by others. The connecting link was Maxwell's light speed variable  $c$ , in that it united the Earth's absolute rotation with both mass-coupled electric momentum energy and mass-less magnetic momentum energy. The earth-electron similitude recognizes the etheric (*mass-less*) *magnetic spin-vector as the 'arrow of time' that determines entropy polarity* and connects this variance to a preferred reference frame for cosmic energy entrainment.

It appears that Tesla's wireless electric power concept understood how absolute motion changes the geometric phase and phase-conjugation can cancel one-way positive entropy flow due to energy dispersion by negating the otherwise irreversible positive entropy.<sup>xi</sup> Only recently has the concept of phase-conjugation been understood in practical terms necessary to negate positive entropy flow associated with energy dispersion. It appears from the following technical description that Nikola Tesla recognized and utilized this Gauss-Maxwell electrodynamics. Tesla states:

---

*"in the system I have devised only force is conveyed to all points of the earth, the energy itself traveling in definite paths determined beforehand ...reaches the receiver without the slightest dispersion, so that an incomparably greater amount is collected than is possible by radiations. I have thus provided a perfect means for transmitting power in any desired direction far more economically and without any such qualitative and quantitative limitations as the use of reflectors would necessarily involve."*<sup>xi</sup>

Tesla's statement "only force is conveyed"—clearly meaning he did not transmit momentum—can best be explained with the force amplification by stimulated energy resonance soliton equation.<sup>xi</sup> The soliton's one-way energy-gradient force is the etheric 'pilot wave' that compounds the ambient-energy-density and warps the autoparametric impedance gradient. This eliminates one-way energy dispersion by *conveying force* rather than *transmitting* momentum. Force is by definition the acceleration of matter through an interaction of matter with a previously un-actualized potential field. Therefore, where there is no matter, there can be no mass-coupled momentum—only etheric force, and force by itself does not propagate through space—only un-actualized potential force-fields propagate. The Electromagnetic Potential force-field is such an ethereal example. In engineering, we tend not to discuss or represent specific force-field phenomena in their un-actualized states (i.e., we represent the force-fields in inconsistent forms representative of their interaction with matter). The etheric Magnetic Potential is an exception to this tendency.

This *etheric force* possibility was first made apparent when Gauss recognized that electric permittivity and magnetic permeability require different time dimensions, the former being irreversible and the latter reversible. Tesla apparently applied this advanced understanding to utilize absolute motion's one-way energy-density-gradient. Tesla's *force magnifying* transmitter produced longitudinal electromagnetic mode (LEM) shockwaves powerful enough to stimulate the autoparametric earth/ionosphere waveguide.

Frequency-resonance is bounded by thermodynamic equilibrium prohibiting the compounding of ambient vacuum-energy-density. Energy-resonance is always far-from thermodynamic equilibrium and it must be autoparametrically bounded to prevent unlimited amplification and explosive breakdown. (Power engineers are very concerned about inadvertently allowing ferroresonance in long-range AC power transmission line systems because intense solar eruptions have triggered autoparametric ferroresonance that exploded very costly transformers.) Properly controlled energy-resonance can safely cohere vacuum-energy because **force does not transfer momentum, i.e., it does not propagate**; it functions by entraining and thus magnifying the *energy-density-gradient needed to warp the nonlinear space-time permeability and/or permittivity of its operational impedance*. The fundamental principals behind FASER<sup>®</sup> technology have been demonstrated commercially by the Author in the elimination of electric plasma energy-dispersion to improve high intensity discharge (HID) lighting.<sup>xi, xi</sup>

---

Completing Tesla's "fuelless" energy analogy at Niagara Falls, where he first proved it was possible to **"harness the very wheelwork of nature,"** consider that the Earth's rotation provides absolute motion and gravity provides the needed energy-density-gradient. The gigantic conceptual leap was Tesla's realization that the earth's ionosphere waveguide provides an *ideal autoparametric* energy-resonant wave-cavity for global cosmic energy entrainment. He attempted to patent this grand invention and secure the finances needed to complete construction of his prototype wireless power station at Wardencliff, in Shoreham, NY. His only mistake was to have accepted J. P. Morgan's draconic terms for a small bridge loan that allowed Morgan to pull the plug on Tesla's chances for success by first underfunding him and then announcing he was no longer backing Tesla. Bereft of Morgan's promised support and unable to collect royalties from Guglielmo Marconi for the radio circuit patents that made him wealthy, Tesla went bankrupt. Marconi sued the U. S. Government for back royalties on his radio patents used in WW I. The lawsuit dragged-out until WW II. Finally, some six months after Tesla's death in 1943, "The U. S. Supreme Court *reversed an initial finding* in Marconi's favor *to rule that Tesla had anticipated all other contenders with his fundamental radio patents.*"<sup>xi</sup> Tesla's grand dream of harnessing the ultimate "wheelwork of nature" lives in obscurity and his unexploited cosmic energy will continue to remain obscure until Absolute Measurement, SU(2) Symmetry, and Maxwell's Quaternions equations, are once again the received doctrine.

## The Body Alpha Preferred Frame of Reference

It was long ago—in 1873—that Kelvin and Tait revealed their theory of a cosmic Body Alpha which provides a *unique direction in space* in their groundbreaking Elements of Natural Philosophy, New edition, Cambridge 1890, Vol. I, p. 241. Sir E. Whittaker summarized this work, stating:

"[Kelvin & Tait]...suggested as a basis for specifying the Body Alpha that the center of gravity of all matter in the universe might be considered to be absolutely at rest, and that **the plane in which the angular momentum of the universe around its center of gravity is the greatest, might be regarded as 'fixed in direction' in space.**"<sup>xi</sup> (Emphasis added.)

The Body Alpha center of gravity and both forms of angular momentum (for the universe and the atom) should be considered central to future understanding. Any mass-coupled element in the universe cannot escape gravity and its complex-coupling to both forms of angular-momentum.

---

Recent astrophysics evidence appears to have found a "Great Attractor" which may be the Kelvin-Tait Body Alpha. The Great Attractor's 30,000 trillion solar mass energy-density-gradient creates a converging whirlpool-like vortex force field that appears '*fixed in direction*' in space. It causes our Earth, Sun, galaxy and all local galactic superclusters to spiral clockwise and southward at ¼% of the thermodynamic-equilibrium speed of light,  $C_1$ . The following quotes succinctly describe this Great Attractor.

Physics today (1987):

*"It is quite conceivable that some entity whose influence cannot be shielded from our laboratories could establish a preferred frame of reference, that is, could cause the results of our experiments to depend on our velocity through space-time."*<sup>xi</sup>

Scientific American (1987):

*"Balloon borne instruments recorded a small but smooth sinusoidal variation in the temperature across the sky. ...For the first time since Einstein's theory of relativity undermined the notion of an absolute frame of reference, it appeared one had measured an 'absolute' motion: the motion of The Local Group with respect to the universe as a whole. ...Nearby aggregations of galaxies such as the Virgo Cluster and the Hydra-Centaurus supercluster share in the motion, which is thought to result from the gravitational pull of a vast, distant concentration of mass -the Great Attractor."*<sup>xi</sup>

Science (1987):

*"What the seven astronomers found, however, was not the small-scale random motions they had expected, but coherent motion on a vast scale. ...The huge Virgo cluster and all the other components of our Local Supercluster and even some of the nearby superclusters such as Indus and Perseus --all seemed to be streaming at some 700 kilometers per second toward a point in the Earth's sky near the Southern Cross."*<sup>xi</sup>

Physics Today (1990):

---

*"Astrophysicist's intent on confirming Einstein's postulated isotropic and homogeneous universe instead discovered a cosmic "Great Attractor" with a calculated mass exceeding 30,000 trillion suns." <sup>xi</sup>*

Speculations in Science & Technology, 1968, Vol.10, includes E.W. Silvertooth's article describing his Defense Advanced Research Procurement Agency (DARPA) sponsored 'translational velocity' one-way measurement test using his absolute motion detector. Silvertooth states:

*"Michelson-Morley type experiments are shown to be non-sequiturs because their logic fails to take into account the relationship between wavelength and propagation velocity. An experimental demonstration of anisotropy in wavelength is described. ...The experimental evidence cited to support the principle of relativity derives mainly from the Michelson-Morley experiment and subsequent variants based on the same logic. That logic fails to take into account the relationship:*

$$c = v\lambda \quad (1)$$

*If a source and receiver are co-moving, and if  $c$  (the speed of light) changes, then the wavelength  $\lambda$  must also change. The frequency  $\nu$  cannot change as this would result in a continuous increase or diminution of the number of waves in the path, a circumstance in conflict with thermodynamics... The apparatus is mounted on an optical table such that it may be rotated about a vertical axis. When the line of travel delta is oriented in an east-west (EW) direction at a time when the constellation Leo is on the horizon, delta, as previously defined, measures 0.25mm. With the apparatus rotated 90 degrees (north-south) the outputs of the detectors remain in phase during an excursion of delta. The detectors also remained in phase in the EW direction when Leo was 6 or 18 hours from the horizon. With a wavelength of  $0.063 \mu m$  (He-Ne) the measured velocity  $v$  is 378 km/s." <sup>xi</sup>*

With Leo on the horizon, at the location of Silvertooth's absolute motion detector, the Earth's magnetic north (geographic South Pole) is pointed to the constellations of the Southern Cross in the direction of the recently discovered Great Attractor.

**Kozyrev's Universal Constant  $C_2$**

---

Astrophysicist Nikolai Aleksandrovich Kozyrev, working at the Pulkovo Observatory in the early 1950's, anticipated the existence of this now revealed Great Attractor. Kozyrev's universal constant (velocity  $C_2$ ) unites astrophysics with quantum electrodynamics by relating fundamental constants with the dimensions of conductance ( $e^2/h$ ) to  $C_2/2$ , which was confirmed by E.W. Silvertooth in his groundbreaking 'translational velocity' experiment which obtained a velocity of  $C_2/2$ .

In his paper, "On the Possibility of Experimental Investigation of the Properties of Time," Kozyrev explains the basis for his Universal Constant,  $C_2$ :

*"...the course of time should be determined by a value having the meaning of the linear speed of rotation. From this fact, it follows that  $C_2$  cannot be equal to the velocity of light  $C_1$  which is an ordinary scalar... Thus  $C_2$  should be a universal constant and can characterize the time course of the world."*  
*xi*

Kozyrev demonstrated that  $C_2$  could be expressed by  $e^2/h$  times a dimensionless factor  $a$ . The presence of the Planck constant,  $h$ , in this expression is, according to Kozyrev, due to the spin of elementary particles. The experimentally determined value of  $C_2$  was given as  $700 \pm 50 \text{ km/s}$ , which accords well with the value of the local galactic streaming caused by the Great Attractor. This newly discovered speed would thus appear to be a fundamental constant of nature unifying the macrocosm and microcosm. With the discovery of this constant, Kozyrev was able to understand why time plays such a fundamental role in the physical world:

*"This value [of  $C_2$ ] makes the links between the course of time and other universal constants probable. Then Sommerfeld's dimensionless fine-structure constant becomes simply a relation of the two speeds  $C_2/C_1$ , each of which is realized in nature."*

*As far as the concrete results obtained in experiments establishing the axioms are concerned, the most important of them are the conclusions about the finiteness of the course of time, about the partial inversion of causality links and about the work due to the course of time. ... The experiments confirm the existence of mutual interaction between systems by means of time. This interaction does not transfer the momentum, in other words it does not propagate but appears immediately in the other material system. In this way an immediate communication and information transmission appear possible."*xi**

---

## 200% Gyromagnetic Energy Gain From Absolute Motion

In conclusion, the author is reporting privately funded experiments that tested the concepts of absolute motion, pumped-energy accumulation, and verification that the light speed barrier can be broken. Experimental tests by Michelson-Gale, Hafele-Keating and Brillet-Hall have provided ample evidence (cf. Hayden' 1990<sup>xi</sup>) that the speed of light is affected by absolute motion, i.e., that the constancy of light postulate, which is fundamental to Einstein's rejection of absolute motion, does not hold. Absolute motion light-velocity-dependence can be revealed by any stimulated energy circulation where mass-coupled and mass-less spin vectors can be aligned with or against a preferred reference frame. Kozyrev was the first to demonstrate that even a mechanical gyroscope can serve as the energy circulation transducer (cf. Dadayev 1991<sup>xi</sup>). It is highly probable that Tesla's Wardenclyff wireless energy transmitter was designed to accumulate the absolute motion energy associated with the cosmic streaming velocity. Tesla stated:

*"We are whirling through endless space with an inconceivable speed, all around us everything is moving, everywhere is energy. There must be some way of availing ourselves of this more directly. Then with the light obtained from the medium, with the power derived from it, with every form of energy obtained without effort, from the store forever inexhaustible, humanity will advance with giant strides."*<sup>xi</sup>

*"Ere many generations pass, our machinery will be driven by a power obtainable at any point of the universe. This idea is not novel. ... Throughout space there is energy. Is this energy static or kinetic? If static our hopes are in vain: if kinetic—and this we know it is for certain—then it is a mere question of time when men will succeed in attaching their machinery to the very wheelwork of nature."*<sup>xi</sup>

To investigate faster-than-light electromagnetic shockwaves, the author developed a Kozyrev- inspired causality-(isosceles)triangle measuring system. The Einstein clock problem is eliminated by using two equal length coaxial signal cables leading to a coincidence measuring oscilloscope. Evanescent surface-wave artifacts have been completely eliminated by ferrite-core shielding over the full length of these cables. Their equal length and uniform wave-impedance ensures equal signal delay.

Stimulated energy-circulation experiments require an electromagnetic shockwave generator to produce consistent (action-at-a-distance) vector-potential 'etheric' **force** fields. Longitudinal electromagnetic LEM waves, using



---

Tesla's words: "...start out at a theoretically infinite velocity slowing very rapidly at first and afterwards at a lesser rate" until they reach the thermodynamic equilibrium light speed,  $C_1$ .

Experimental verification of gyromagnetic energy gain requires a well defined scalar transition into the vector potential **force** field. This required the perfection of a super-fast, picosecond-rise-time, hydrogen-quenched mercury switch capable of sustaining an initial scalar potential large enough to initiate a 1000 Volt/mm electromagnetic shockwave.

The required current-circulation accumulator employed an oval G-line (cf. Goubau 1950<sup>xi</sup>) with two circulation foci at different elevations separated by a conducting ground plane and two ground-referenced current sensors. East-West current circulation is prograde to the Earth's absolute motion. As the Earth spins, it also rotates about its central attractor, the Sun, which rotates about the 'Great Annihilator' at the center of our rotating galaxy, itself part of a super-galactic system of superclusters all involved in coherent vortex streaming toward a central 'Body Alpha'. The streaming velocity toward the (Great Attractor) is 1/4% of the thermodynamic light speed, and all that is needed to entrain the resulting absolute motion energy-density-gradient is to pump a current-circulator with 'faster than light' shockwaves. The spin-vector of our stimulated-current-circulator can be pointed toward or away from the preferred reference frame, as indicated by measuring its gyromagnetic energy gain or loss.

To stimulate either prograde or antigrade current-circulation, the direction of the shockwave-induced energy impulse must be reversible and strong enough to achieve absolute motion entrainment. Notably, the *direct* light path to our circulating-current Goubau transmission line conductor was shorter than the compound light path to the more remote current sensors. A 50 x current and 10 x time expansion of the leading edge portions of the displayed energy from the upper and lower circulation-current detectors enabled oscilloscope testing of the Einstein 'nonlocality' light-speed-delay prediction. Kozyrev's "*partial inversion of causality links*" is seen in the time comparison of the cause and effect statistics. The 50x current and 10x time expansions clearly show that, despite the substantial light-path difference, these "remote" circulation-current detectors see the 'nonlocal' effect, with respect to the 'local' cause (the shockwave impulse) without the predicted light-speed delay. By integrating the accumulated difference in circulating current, we can determine prograde (energy gain) or antigrade (energy loss).<sup>xi</sup>

Nikola Tesla's many nineteenth-century patent applications were accepted as submitted until his claim of 157% faster than light was rejected.<sup>xi</sup> He statement that: "the wave starts out with theoretically infinite velocity, slowing rapidly at first and afterwards at a lesser rate" indicated that as electromagnetic

---

shockwaves slow to light speed their mean velocity must be greater than the speed of light  $C_1$  as demonstrated by the author.

The author found that non-dispersive *energy-resonant gain* becomes dispersive *frequency-resonant loss* when the magnetic shock-wave stimulation is antigrade. With antigrade stimulation, the .029 RMS Ampere input produces a .027 RMS Ampere output an energy loss of nearly 7%. However, with prograde stimulation and a reduced .017 RMS Ampere input, the resulting .035 RMS Ampere output indicated the energy gain was greater than 200%. For more detailed information about this experiment see the APEIRON Publication (Vol. 16 June 1993).

<http://redshift.vif.com/JournalFiles/Pre2001/V00N16PDF/V00N16IS.S.pdf> ).

## Conclusion

The foregoing discussion has illuminated a complex and troubled, yet promising landscape. Much was lost with the 1908 revisions to the Gauss-Maxwell electrodynamics and with the straight-jacket imposed on science by the *Special* Theory of Relativity. However, the environment has changed appreciably as a result of numerous findings that violate Einstein's relativity postulates. The evidence expressed in this paper of superluminal velocity, absolute motion, and favored inertial reference frames adds to that body of contradicting results. We hope this will inspire further research and understanding extending far beyond existing energy technology now limited by the Second Law of Thermodynamics.

## References

- <sup>xi</sup>. A. Einstein, The Meaning of Relativity, Pg. 16, Princeton University Press (1950)
- <sup>xi</sup>. J. C. Hafele and R. E. Keating, *Science* 177, 166 (1972).
- <sup>xi</sup>. B. G. Wallace, *Physics Today* 36 (8), 13 (1983).
- <sup>xi</sup>. J. R. Wilkinson, "Ring Lasers," *Quantum Electrodynamics Journal*, PG. 5 (1984).
- <sup>xi</sup>. D. Z. Anderson, "Optical Gyroscopes," *Scientific American*, April 1986
- <sup>xi</sup>. D. Thorrr and P. Kolen, "Precision Measurement and Fundamental Constants II," National Bureau of Standards, P. 675 (1984).
- <sup>xi</sup>. B. G. Wallace, *Physics Today*, 36 (8), 13 (1983).
- <sup>xi</sup>. Gray & Isaacs, A New Dictionary of Physics, p. 84, J. W. Arrowsmith Limited, Winterstoke Rd. Bristol BS3 22NT, Great Britain.
- <sup>xi</sup>. Andrew Gray, Absolute Measurements in Electricity and Magnetism, Dover Publications, Inc., NYC.
- <sup>xi</sup>. Ibid., pg. 29
- <sup>xi</sup>. "Anticipations of the Geometric Phase," Michael Berry, *Physics Today*, December 1990.

- 
- <sup>xi</sup>. “Time-Reversed Light,” Cover Headline,, David M. Pepper, Applications of Optical Phase Conjugation. “*Scientific American*,” January 1986.
- <sup>xi</sup>. Nikola Tesla, *World System of Wireless Transmission of Energy*, Telegraph and Telephone Age, October 16, 1927
- <sup>xi</sup>. A.C. Scott, F.Y.F. Shu, and D.W. McLaughlin, *The Soliton: A New Concept in Applied Science*, Proceedings of the IEEE, Vol. 61, No. 10, October 1973.
- <sup>xi</sup>. Thomas. Lemons, Guy Obolensky and Michael McGovern, *A New Hid Ballast Concept*, Presented at the 1975 Annual Technical Conference of the Illuminating Engineering Society, July 14, 1975.
- <sup>xi</sup>. Thomas M. Lemons, FIES and Guy Obolensky, *Improved operation of HID lamps, Lighting Design & Application*, January 1978.
- <sup>xi</sup>. June 21, 1943- “United States Reports; Cases Adjudicated in the Supreme Court of the United States,” Vol. 320; Marconi Wireless Telegraph Co. of America v. United States, pp. 1-80.
- <sup>xi</sup>. Sir Edmund Whittaker, V. 2, *A History of the Theories of Aether and Electricity*, the Philosophical Library (1954), ISBN 0-88318-523-7.
- <sup>xi</sup>. M. P. Hagan and M. W. Clifford, “Modern Test of Special Relativity,” *Physics Today*, May (1987).
- <sup>xi</sup>. A. Dressler, “The Large-Scale Streaming of Galaxies,” *Scientific American*, Sept. (1987).
- <sup>xi</sup>. M. M. Waldrop, “Are We All in the Grip of the Great Attractor?,” *Science*, Vol. 237, Sept. (1987).
- <sup>xi</sup>. B. Schwarzschild, “Gigantic Structures Challenge Standard View of Cosmic Evolution,” *Physics Today*, June (1990)
- <sup>xi</sup>. E. W. Silvertooth, Experimental Detection of the Ether,” *Speculations in the Science and Technology*, Vol. 10 (1986)
- <sup>xi</sup>. N. A. Kozyrev, “On the Possibility of Experimental Investigation of the Properties of Time,” P. 111 to 132, *Time in Science and Philosophy*, American Elsevir Publishing Co. (1991) ISBN 0-444-40840-1.
- <sup>xi</sup>. Ibid.
- <sup>xi</sup>. Hayden, H. C., 1990, *Galilean Electrodynamics* 1:10-11.
- <sup>xi</sup>. Dadayev, A.N., 1991, *Nikolai Aleksandrovich Kozyrev*, Selected Works, Leningrad University Press.
- <sup>xi</sup>. Thomas Commerford Martin, *The Inventions Researches and Writings of Nikola Tesla*, Barns & Noble. Inc., pg. 197, 1992, ISBN 0-88029-812-x.
- <sup>xi</sup>. David h. Childress, *The fantastic Inventions of Nikola Tesla*, pg.97, Adventures Unlimited Press, August 1993, ISBN 0-932813-19-4.
- <sup>xi</sup>. Goubau, G., 1950, Surface Waves and Their Application to Transmission Lines, *JAP* 21:1119-1128.
- <sup>xi</sup>. Paul A. LaViolette, *Secrets of Antigravity Propulsion*, pg. 179-185, “Guy Obolensky investigated the speed of electric field shocks to test Tesla’s claims,” BenardCompanyBooks.com., 2008, ISBN: 978-1-59143-078-0.
- <sup>xi</sup>. US Patent Office file No. 112,034; filed May 16, 1900; Art of Transmitting Electrical Energy through the Natural Media, Examiner, Division XVI states: “...applicant has set the value of v to be  $4.7124 \times 10^{10}$ , instead of the value  $3 \times 10^{10}$  determined by Maqxwell.” Tesla’s response: “...reference is made to the mean velocity on the earth’s surface.”









**M.A.P**

## **Magnetically Activated Plasmas**

*Pain relief, healing and regeneration*

MAGNETIC HARMONIC FIELD IMPLOSION

Creating the Caduceus Cascade of BIO ACTIVE HEALING

Incorporating the unique GOLDEN RATIO HYDROGEN PLANCK

SCALING FACTOR used for ACCELERATED PHASE CONJUGATE

PAIN RELIEF and HEALING

### **What does our technology do?**

MAGNETIC PHASE CONJUGATION is a magnetic cascade, which eliminates pain and speeds healing. Our frequencies applied to our magnetic field, produces an **implosion of self-organizing BIOLOGIC Fields**. **What this means is we now know precisely the magnetic and by analog-dielectric FIELD which restores compression and is the FIELD SYMMETRY KEY to healing and tissue regeneration.** There are many other uses such as bone regeneration and stem cell switching.

**Successful trials have been conducted and measured for natural pain relief.**

This device utilizes new principles which correctly impedance match external pulsed magnetic fields to non-invasively correct neuronal and other biological informational channels to reduce and eliminate pain. This device can be utilized to treat chronic pain, current injury and surgical recovery and has been successful in over 90% of patients in four major clinical trials.

---

A 100% of the patients received highly significant pain reduction in FDA trials at the Sierra pain institute of Nevada. Treatment times are anywhere from 30-60 minutes and depend on the time of pain the patient has been in pain and the source of the pain. As little as one treatment to as many as 15 treatments over a period of months shows high efficacy and no side effects. This is a completely novel non-invasive pain reduction technology

Extensive preliminary evidence that PHASE CONJUGATE MAGNETICS can not only reduce pain but also increase healing rate. We understand the physics- because this creates the magnetic environment of restored fractality- precisely the definition of healing in biologic tissue.

### **History**

“Every cell in the body is designed to run at a voltage of -20 millivolts to -25 millivolts. We heal by making new cells. Making a new cell requires -50 millivolts. We get sick when our voltage drops below the operating voltage of -20 millivolts. Thus all chronic disease is defined by having low voltage”

Jerry Tennant, MD Author “Healing is Voltage”

### **Higher Symmetry EM Theory**

In thousands of animal experiments in France in the 1960s and '70s, Antoine Prioré used scalar electromagnetics to cure terminal cancers, infectious diseases, and restore suppressed immune systems. Government funding was cancelled in 1974, and the technology was suppressed.

### **December 2002**

Tom Bearden places 20 years of research into the Public Domain to stimulate redevelopment of scalar EM healing (the “Porthole Process”). Application of the “Porthole Process” can potentially cure cancer, AIDS, SARS, anthrax, or ANY cellular affliction in 30-second treatment. Genetic diseases can be similarly treatable.

Based on Prioré’s successful results, Process simply amplifies the body’s natural regenerative ability to heal itself.

A different embodiment of the Patent can also be used to neutralize any form of radioactive waste in minutes.

---

## **Relevance of the Priore Technology - Updated**

- Original Priore technology used plasmas for mixing: highly inefficient. Only 1% of energy is emitted as longitudinal.
- This technology had a low power density: Magnetically activated plasmas take up a large volume, and the tube that Priore was intending to use took up a large fraction of the building.

### **Here is our update and innovation to re create the Priore Effect**

- Solid-State nonlinear materials are used. This allows for an increase of at least one order of magnitude for power density, and tighter control for frequency and phase coherence.
- An increase of phase coherence allows for the inclusion of different wave forms, which can conceivably "steer" the probabilities into a past for the organism to a state better than it started with. This is necessary, as in some genetic conditions, a chronological "map" results that means that the same condition will recur over time. In order to prevent this, one must rewrite the "map", and restructure the probabilities. This is true regeneration, in which the organism changes to a less entropic state that will not be repeated in the future, similar to what some simpler organisms, such as jellyfish, do, which are in a state of virtual immortality.
- This facilitates extremely rapid healing rates. Also with the increase in power density and efficiency, a handheld unit is possible. One can carry a unit that can cause tissue to mend in minutes in a backpack, the size of an iPhone. This is the ultimate first aid kit. As in the Bearden Provisional patent, this can be included in all the gear normally carried by a first-responder for rescue operations.
- Cost: The original Priore plasma tubes were heavy and labor intensive to construct, with mercury vapor and noble gases. The major expenses were the tubes and drivers. In this new version, the solid-state emitters/mixers are a fraction of that cost, and robust enough to



---

carry into the field, without the fragility of noble gas tubes. New solid-state VLSI (Very Large Scale Integration) devices promise to shrink the physical volume and production costs even further.

### **Conclusion:**

A solid state version of the Priore machine is not only feasible with today's technology, but would be in high demand by a public that is moving away from chemically-based healing methodologies. The machine would have no side effects, as opposed to the pharmaceutical approach and it's horribly debilitating, health-compromising alternative

### **Background**

Patented new technology for non-invasive pain relief, free of side effects that can be used continuously to target pain throughout the body. Based on magnetic cascade, which eliminates pain and speeds healing. Trial testing has been achieved in hospitals.

### **Non-invasive pain treatment and elimination**

- Patented new technology for non-invasive pain relief, free of side effects that can be used continuously to target pain throughout the body. Based on magnetic cascade, which eliminates pain and speeds healing.
- A clinically tested method of pain reduction - based on a related principle of MAGNETIC PHASE CONJUGATION
- This device utilizes new principles which correctly impedance match external pulsed magnetic fields to non-invasively correct neuronal and other biological informational channels to reduce and eliminate pain.
- This device can be utilized to treat chronic pain, current injury and surgical recovery and has been successful in over 90% of patients in four major clinical trials. A 100% of the patients received highly significant pain reduction in FDA trials at the Sierra pain institute of Nevada.
- Treatment times are anywhere from 30-60 minutes and depend on the time of pain the patient has been in pain and the source of the pain. As little as one treatment to as many as 15 treatments over a period of months shows high efficacy and no side effects. This is a completely novel non-invasive pain reduction technology.
- As little as one treatment to as many as 15 treatments over a period of months shows high efficacy and no side effects.
- Extensive preliminary evidence that PHASE CONJUGATE MAGNETICS can not only reduce pain but also increase healing rate.

---

We understand the physics- because this creates the magnetic environment of restored fractality- precisely the definition of healing in biologic tissue.

### **A Non-Technical Description of the Priore Process**

Reference: This is a reprint from Dr. Tom Bearden "The Tom Bearden Website"

#### **Introduction**

In the 1960's and 1970's, in France Antoine Priore built and tested electromagnetic healing machines of startling effectiveness. In hundreds and hundreds of rigorous tests with laboratory animals, Priore's machine cured a wide variety of the most difficult kinds of terminal, fatal diseases known today. Funded by the French government in the amount of several million dollars, Priore's machines concretely demonstrated a nearly 100% cure of all kinds of terminal cancers and leukemias, in thousands of rigorous laboratory tests with animals. These results were shown to medical scientists as early as 1960.

Many of the experiments and tests were done by prestigious members of the French Academy of Sciences. Robert Courrier, head of the Biology Section: and Secretaire Perpetuel, personally introduced Priore's astounding results to the French Academy. The operation of the Priore machine was seemingly incomprehensible. Many orthodox French scientists'some of them world renowned'were outraged at the success of such a machine, shrilling that science had nothing to do with "black boxes:." They loudly called upon the inventor to explain the mechanism utilized by his machine, but the inventor either wouldn't or couldn't explain the curative mechanism.

Priore certainly knew how to build the machine and make it work. It is debatable to this day whether anyone'Priore included 'actually understood its principle of operation. Neither the French Academy nor Antoine Priore knew anything of phase conjugation at the time. In fact, the entire Western World knew nothing of phase conjugation in the 1960's when Priore was getting his finest results. At that time, only the Soviets knew of time-reversed waves. Certainly Priore's machine was impressive.

Into a tube containing a plasma of mercury and neon gas, a pulsed 9.4 gigahertz wave modulated upon a carrier frequency of 17 megahertz was introduced. These waves were produced by radio emitters and magnetrons in the presence of a 1,000 gauss magnetic field. Experimental animals were exposed to this magnetic field during irradiation, and the mixture of waves (some 17 or so) coming from the plasma tube and modulating and riding the magnetic field passed through the animals' bodies. Amongst other things, a plasma can convert a transverse wave to a longitudinal wave. Also, phase

---

conjugate (time-reversed) waves can be produced by plasmas. Priore's apparatus produced a scalar EM wave/signal with deliberately constructed, in-folded components including phase conjugate waves.



**Previous page image: One of Priore's intermediate devices. This device cured terminal cancers and leukemias in thousands of laboratory animals.**

**Photo Courtesy Bob Whitney**

One may roughly view a cancer cell as a normal human cell gone "awry" and out of control of the body's master cellular control system. The cancerous cells, viewed as a sort of separate, parasitic group of cells, form a special kind of organism having its own master cellular control system "level," immersed in the host's biopotential.\*

\*One strongly points out the relevance of Dr. Robert Becker's epochal experiments proving that cells can be dedifferentiated and redifferentiated electrically. Those experiments are strong indicators that the cancer cell should be capable of being reverted to its more primitive state that of the normal cell by electromagnetic means.

**There is thus a specific, constant electromagnetic "delta" that differentiates the parasitic cancerous "organism" from the normal - human cellular organism.**

This "delta" can be considered a sort of constant, complex-structured charge existing in the body's atomic nuclei. It's exactly as if the body biopotential had been charged up by Kaznacheyev's "death photons" for that specific cancer condition. If this cancerous "delta" (which may be rather like a complex

---

intermodulation mix of waves)'or a frequency shifted "transform" of it to a different frequency band'is phase conjugated, a specific healing delta frequency pattern results. If phase conjugate replicas of a cancer's cell's specific "delta" frequencies are fed into the body having that cancer, the deviation of the cancer cell's master cellular control system will be "time reversed." That will return the cancer cell to control of the animal's proper master cellular control system. The cancerous cell will be immediately destroyed, or reverted back to a normal cell of the animal.

A very similar process exists for just about every disease bacterium and infectious agent that attacks the body.

Phase Conjugates of "Death Photons" are "Healing Photons"

The Kaznacheyev experiments in the Soviet Union proved that any cellular death and disease pattern can be induced by a specific electromagnetic pattern carried on an electromagnetic signal, if the target cells are bombarded with the pattern-carrying carrier signals for a length of time. What was not published of Kaznacheyev's work was the correspondent work showing electromagnetic reversal of cellular death and disease conditions by irradiating the diseased cell cultures by phase conjugate replicas of the pattern-carrying induction signal.

In simplified terms, if an action in forward time induces a condition, then the time-reversal of that action will reverse the condition. The concept is almost laughably simple. The time-reversal of an electromagnetic disease process is a specific healing process for that disease.

In his device, Priore internally structured the carrier photons themselves'making them vacuum engines. He phase conjugated his vacuum engines, and then passed these time-reversed vacuum engines down and through a strong magnetic field which thoroughly penetrated all cells of the biological organism being treated.

The scalar components (structured photons) representing the time-reversal of the disease were absorbed and reradiated in all the cells, "charging up" the nuclei of the atoms in the organism to some potential level of the exact "healing and reversing pattern."

In the process, the cancer/leukemia pattern/charge also destroyed the cancer cells, or converted them back to normal cells as appropriate.

As a highly simplified analogy, the complex signal - viewed as a scalar Fourier expansion - represented a "stress" against any abnormal cellular control system encountered and returned it to the normal cell's master cellular control system of the body. Encountering the normal control system in normal cells, it produced zero stress. Encountering the abnormal control

---

system in tumorous cells, it produced great stress on it, reverting it to the normal control system of the body's normal cells. Thus to a normal cell the Priore signal pattern acted somewhat as a comb passing through one's hair.

No interference occurred with the normal cell (one whose scalar control pattern is phase-locked to the body's master cellular control system and in phase with it). The Priore signal stimulated and "stroked" the normal cell, but did not hurt it at all.

On the other hand, the scalar control pattern in and of an abnormal (cancerous) cell is out of phase with the body's master cellular control system, and is not phase-locked to it. Hence the Priore signal caused direct interference with the abnormal cell's independent scalar control system. The interference pattern constituted the reconstruction of normal energy directly in the cancerous cell, and also jammed its abnormal scalar life signal. This destroyed the cancerous cell by two mechanisms: (1) physical energy was kindled directly in the abnormal cell, causing direct mechanical damage, and (2) the cancerous cell, being an "independent living critter," had its scalar life channel (connecting its primitive "mind" to its "body") jammed and stopped.

If the cancerous cell was reverted to a normal cell by the Priore stress before being destroyed, it became just a normal cell and the Priore stress had no further effect upon it.

**The Effect is Universally Applicable.** Any disease with cellular, biochemical, or genetic basis can be cured in like fashion.

Priore's method, for example, was clearly shown to be able to completely reverse clogging of the arteries with fatty deposits, and to be able to lower the cholesterol level to normal, even in the presence of an abnormally high cholesterol diet.

His method also showed complete mastery and cure of sleeping sickness and trypanosome-induced illnesses.

Often Priore found that every cell of the body'even the hair' must be irradiated and treated ("charged up") with the signal, for the disease pattern was in every cell. The master cellular control system is holographic'the pattern (substructured potential with its dynamic, oscillating components) is in each component (each atomic nucleus, hence in each cell.)

Every structural level of the body larger than the cell also has its own correlated pattern, or modulation, on the overall. A biological organism can regenerate lost limbs, for example, if it can utilize its natural recovery process in a Priore manner. Even though Priore's work was presented to the French Academy of Sciences by Robert Courrier, the prestigious head of the Biology

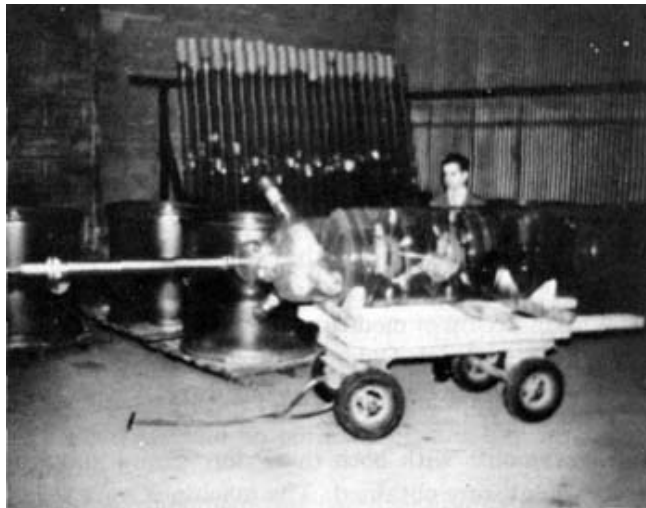
---

Section, the Academy could not understand the device and its functioning. That was because the Academicians knew nothing of scalar electromagnetics, and phase conjugation, and the Priore machine was a scalar electromagnetic device using phase conjugation.

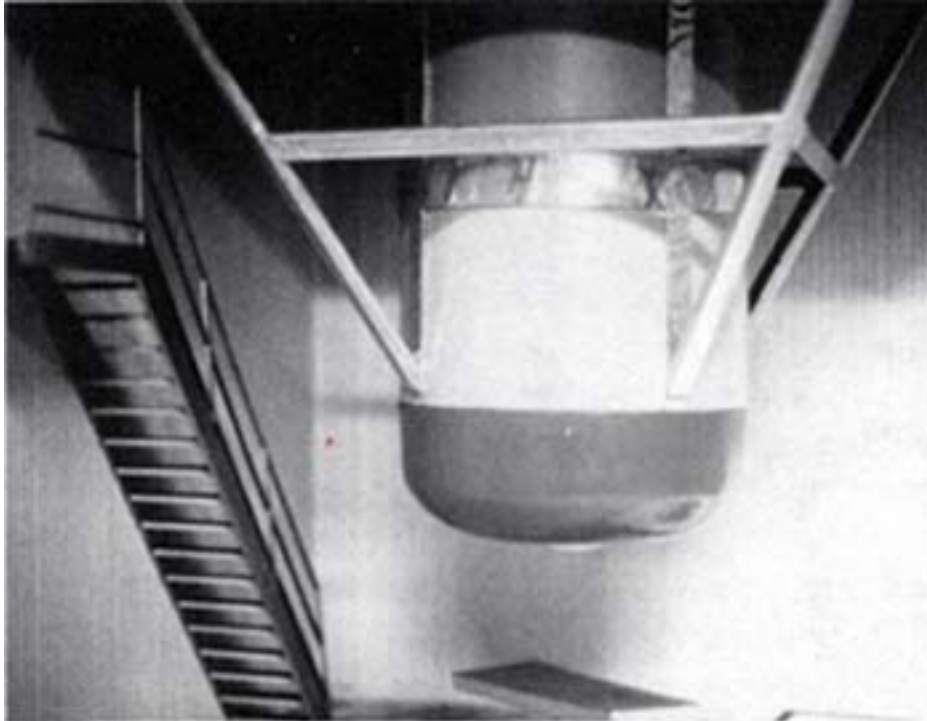
### **In the Mid-70's It Ended**

In 1974, a change of local government lost Priore his government supporters. His support and funding were lost.

Ironically, Priore was just completing a 4-stories-tall apparatus capable of radiating and treating entire human bodies. It would have been capable of curing cancer and leukemia in humans rather than just in laboratory rats. (His previous machines were much smaller, and only a small animal could be irradiated whole-body. In that machine Priore used a "1amp," a special section, in which 17 specific frequencies were mixed and modulated upon the 9.4 gigahertz carrier.



**The large, special, phase-conjugating plasma tube for Priore's giant device. The final machine would have treated humans "whole-body." (Courtesy Bob Whitney)**



**The last device would have treated human patients "whole-body." The cap assembly was on the third floor of the device. (Courtesy Bob Whitney)**

The machine was large enough to irradiate humans over their whole body. It should have been capable of curing cancer and leukemia in two five-minute irradiations, one week apart Capping assembly for the top of Priore's giant plasma tube device..

While Priore was still alive, with my associates I spent nearly two years of my life in an effort to bring the Priore device to market and into the mainstream of medical research and development.

Robert Whitney, Frank Golden, and Tony Gideon played the major role, going to France and negotiating directly with the Priore group and the French government.

Verbal agreements with both the Priore group and with the French government were obtained. The machines were to be built, assembled, and tested in Bordeaux. Then they were to be dismantled and shipped to the purchasers' large medical research and development laboratories where they would be reassembled on site.

A group of wealthy backers was going to provide the necessary millions to fund the effort. Final contracts were being drawn.

---

Mysteriously, all funding for the project was suddenly withdrawn. Our backers were "leaned on" very hard and strongly threatened. Nothing we could do could revive the project.

Priore never again recovered his funding, and later died. The machine fell into disarray and was disassembled. However, the proof that the requisite time-reversed signal can be produced, and will ride down a magnetic field, to penetrate every cell and every atomic nucleus in the body, is already in the present hard-core physics literature, if one knows where to look and how to properly interpret the work.

The fact that such signals can reverse nearly every major cellular illness condition of the body also has been proven by Priore and the scientists who worked with him, and it is in the French scientific literature.

The Priore-type cure for AIDS and other diseases only requires the necessary funding and personnel to be redeveloped and reestablished.

## **HERE'S HOW IT WORKS**

In simple terms, it works like this. There are two mechanisms in the body of concern to treatment of disease and recovery from disease and damage. One is the immune system, which is like the soldiers on a battlefield. It attacks the "bad guys" (the invaders) and destroys them. After a great battle, usually it wins (or we would all die), and the battlefield is littered with the residue. The immune system also has large "scavenger" cells when then come in and "clean up the residue". Thereafter, the function of the immune system is over. It does not "heal" anything, even its own damaged cells.

The actual "healing" system in the body is the cellular regenerative system, poorly studied, and in fact mostly studied by Becker. This is an electromagnetic system, but of a rare kind not used in our common power systems, communication systems, etc. Instead of using the common transverse EM waves, this system uses longitudinal EM waves and time-polarized EM waves. Ugh! A time-polarized EM wave is an energy current in the time domain, and the basis for such does appear in a very modern physics theory called quantum field theory. There we are introduced to time-polarized photons, for example. The easiest way to "visualize" a time-polarized oscillation is that, instead of oscillating energy in space, the wave oscillates the rate of flow of time just a little bit. So it is a "compression and rarefaction of the local rate of flow of time", so to speak.

Anyway, just as biological systems used common electromagnetism, frequency modulation, amplitude modulation etc. for eons before Maxwell finally glued together magnetism and electricity, it has also used this "time-



---

domain" type of "hidden" electrodynamics since the beginning. In fact, it uses it to heal damaged cells, etc. It works this way:

After the Russians briefed Lawrence Livermore Laboratory scientists in 1972 about a strange kind of electromagnetic wave that would suddenly appear in experiments and "restore order", modern phase conjugate optics was born. In extremely simple terms, suppose you "squeeze" (pump) a little particle of nonlinear mass with spatial-energy (normal) EM waves at certain frequencies, and then "tickle" the rhythmically squeezed mass with a separate little EM wave that you input. Oddly, the energy in the "pumping" waves will be transformed into a strange kind of "backwards traveling" or "crawfish" wave that backtracks the path that the little input wave took. In short, this strange "time-reversed" wave in essence is in magnitude some fraction or amplification of the input wave, and it propagates back along the path taken by the input wave -- even if the input wave itself is already "gone"!

So with NORMAL pumping with spatial energy, we create an amplified time-reversal spatial energy wave that REVERSES whatever the input wave did.

Here is the magic in the Priore process: If we pump (squeeze rhythmically) a living cell in the TIME domain, we pump every part and point of it simultaneously. So we produce an amplified "time-reversal force wave" on each and every part of the mass-energy comprising the cell. The miraculous thing is that we then precisely "time-reverse" the entire cell and all its parts -- including the genetics itself -- back along the previous path through time that the cell took in having changes occur to it -- such as diseases and damage!

Not only can we amplify and time-reverse the energy in a normal EM wave, but we can now also amplify (shorten the time required to change) and time-reverse the energy comprising a living mass.

We can gradually reverse the damaged or diseased cell back to an earlier physical condition, before the damage or disease was there! The cell itself gradually physically changes.

That is the basic mechanism, uncovered by this researcher, that every living biological system uses to heal itself. That is the final mechanism that Becker so ardently sought and so closely approached in his epochal work, and that is the mechanism that was responsible for the astounding cures achieved by the Priore team in France in the 1960s and early 1970s.

It took me 14 years to decipher that mechanism, so simply explained above.

Anyway, the body ages only because gradually the cellular regenerative system deteriorates a bit, and so can no longer fully restore the cells back to full youthful vigor. The aging process itself can also be reversed and "cured"

---

by precisely the same process. We emphasize that all the treatment does is accelerate and enhance the human body's own natural healing mechanism -- which still does not appear in our medical science, because the type of electrodynamics used by the body's healing process has not even been applied (and seldom even studied) by Western medical scientists.

A rigorous theoretical basis for the foregoing can now be established from the pioneering advanced electrodynamics work of a few great pioneers, such as Evans and Barrett. The electrodynamics that results is in fact a unified field theory, which is now shown by those researchers. Particularly the magnificent higher symmetry  $O(3)$  electrodynamics advanced by Evans has "met in the middle" with Sachs' unified field theory, and so the combined Sachs-Evans theory is now able to fully model and explain the mechanisms involved.

Yet our scientific community remains hostile to the very notion of EM healing, even though the natural healing mechanism used in all biological systems is purely electrodynamics -- albeit a most unusual form of electrodynamics that the medical scientists do not study.

I also found a way independently to greatly accelerate the Priore method, and then discovered later that French researchers had previously uncovered this mechanism, without at all understanding it. Nonetheless they first demonstrated it. In the Priore method, one must irradiate the entire body of the patient (or animal subject) with longitudinal EM waves, made from plasmas, etc. Priore embedded these waves in rippling magnetic field carriers, to guarantee that the deepest bone marrow was penetrated and exposed to the non-ionizing radiation. Irradiation with longitudinal waves stimulates the body to produce a little more of the time-polarized "pump" waves, hence achieves some "pumping" of the required type in the living cells. That results in "time-reversal" of the damaged cells back to health; in short, an accelerated natural healing process.

In the new method, if the exact spectrum of EM radiation FROM a diseased or cellularly-damaged body is captured and amplified, and then fed back into the body, one finds a very strange process occurs. Imagine that you have a great ship with portholes, and there are many dynamic processes ongoing in that ship, which all emit light, etc. The light reflects from many things in the ship, but eventually emerges from the portholes. Now imagine that you could put back in stronger light precisely anti-parallel to the emerging light, of exactly the same frequency, waveform, patterning, etc. All that amplified light energy would now travel backwards through all those (assumed) reflection paths, and arrive back at all the original processes. But the arriving energy is greater than the ongoing emerging energy, so the processes get "reversed" back to a previous state of operation.

---

In short, the "porthole" effect uses only ordinary EM radiation, but very precisely and very carefully measured and tailored. Yet it will also engender the same time-domain pumping back in all the deep interaction of the body, in every cell and every part of it. In short, we get a direct and very quick time-reversal of all those physical processes.

This method is very dramatic, and very quick (less than one minute irradiation). It is also agonizing to the patient during irradiation (it has been done surreptitiously on dogs, e.g., by a researcher who wisely conceals his identity) and did rejuvenate an aged, crippled German shepherd.

All of this, properly funded with a great scientific team carefully chosen, can provide a revolutionary new medical therapy. There are no such things as "resistant pathogens" to the process; everything is mass energy and just get backed up right out of there. Indeed, the exchange between the pathogen and the host's immune system, where the pathogen finally succeeded in tricking or avoiding the immune system (as in AIDS), is also reversed back out of there, and the immune system is also restored to full vigor. The result is that the immune system now recognizes the pathogens again completely, and goes after them vigorously. In short, the body is again able to use its full healing power against the "resistant" organism again, completely negating the "deception" that was achieved by the pathogen.

But this science will never be born from the official science community, because those who control the funds for research will simply not allow it. It will require a private group or private wealthy person to fund the research necessary to do it.

Let us hope that the day comes when the funds are available, and we then do get on finally with developing a science of total healing, to replace and augment the present medical science of cut, burn, kill, and vaccinate.

In response to a further query on this subject, Dr. Bearden responds:

I know of no other reference to time-reversing the cells electromagnetically than my own papers.

In biology, the change of a cell to a previous or "more primitive" state is called dedifferentiation. The change of a cell "forward" or to a "more specialized" state is called "differentiation". So the change of the cell back to a more primitive state or forward to a more specialized state is well-known.

Another area involved is cellular regeneration. Robert Becker's work is probably the best and most advanced example of the state of the art of the study that has been done of the "cellular regeneration system", particularly from the standpoint of inducing changes in it by electromagnetic

---

means. Becker did, I feel, induce the phase conjugation effects, but during much of his work (earlier, 1960s) modern phase conjugate optics had not even been born. It eventually got started after Russian researchers briefed U.S. researchers at Lawrence Livermore National Laboratory about a strange EM wave in reactions that would come back out and "restore order" in disordering processes. Even then, it really did not get well underway until about 1979 or 1980, except for a handful of U.S. researchers such as Yariv and Fisher.

So Becker's work used ordinary EM electromagnetics, without the phase conjugate part of the theory -- but his work did show some of the effects. He certainly was able to stimulate regeneration or partial regeneration of limbs in certain test species.

As another problem, even today phase conjugate electromagnetics does NOT deal with reversing mass-energy itself, so that the mass is "time-reversed". Instead, it is concerned only with forming a time-reversed replica of an input wave (as in 4-wave mixing). The beauty of the process is that the two opposite "pump" waves add energy to the phase conjugate replica wave that is born in response to the stimulus wave (called the "signal" wave). So the resulting time-reversed wave may have greater energy than the stimulus wave to which it responded. But some of the characteristics are most interesting. The stimulated time-reverse wave will "travel" or appear back along through space over the exact path, point by point, that the stimulus or input wave took when it came in. (This is the simplest case; it is possible to force the emitted time-reverse wave in the forward direction as well, etc.).

Here is the point: We may consider the energy in an ordinary EM wave to be oscillating in a plane (the wavefront) which is traveling at the speed of light). In short, the energy exists in two dimensions in its oscillation, but the entire "carrier plane for the oscillation" is moving.

In a mass, the mass-energy is three dimensional, not two dimensional, and it is not confined to a plane wavefront. Hence standard "two-dimensional wave in space" pumping will not reverse the mass. It will simply produce nonlinear wave effects, such as phase conjugating incoming "signal" wave or some of the "signal" waves present in the mass.

So the problem in returning the mass-energy includes several requirements: (1) the 3-dimensional energy (highly compressed) that is the mass-energy is what must constitute the "signal wave", (2) the pumping must pump every single point in the mass, throughout its interior, simultaneously, else we are not pumping 3-dimensional energy but are pumping "surface" wise or 2-dimensionally, (3) the domain in which we pump ("squeeze") must therefore be what is called "multiply connected" to every point in that 3-space

---

object (mass), and so (4) that is a characteristic of time (the time domain, since at a single point in time, every spatial point in the universe exists), and (5) it must be a localized time-domain pumping, so that only the mass or its close vicinity is pumped. Only by fulfilling all those requirements can we "pump the mass -- such as the human body or the body of a test animal -- in the time domain, thereby time-reversing the cells back to a previous earlier (healthy) condition.

In France, Pautrizel did some experiments with immature baby rats that clearly proved that time-reversal was involved. He infested the rats (whose immune system was still very immature and not very strong) with trypanosomes. Then he applied the Priore treatment, which restored the cells back to their previous condition and the immune system back to its previous system. However, the time reversal does not kill the trypanosomes, so the pathogens are still present. And the baby rats' immune systems were still very immature and unable to cope with the pathogens. Hence those rats all died. Yet mature rats with fully developed immune systems, infected the same way and treated the same way, resulted in the re-invigorated and strong immune systems dispatching the pathogens in short order, so that the rats all lived. In short, he really did show that the EM non-ionizing radiation was in some manner time-reversing the cells of the treated body back over the paths they had taken in time.

Hence he demonstrated that, somehow, those five conditions were being achieved by the odd EM irradiation that Priore had established from stimulated plasmas in plasma tubes.

Becker showed that the cellular regeneration system also restores the cells, and is stimulated and amplified electromagnetically. But he could not achieve quite such startling results, since he used ordinary EM radiation and not specialized EM radiation coming from plasmas.

That was the arena into which I stepped. The first problem was how to "pump in the time domain". In quantum field theory, there are several polarizations of the photon: (1) the regular transverse photon, which we model as the energy oscillating sideways -- and this produces and constitutes the ordinary EM transverse wave. That is the "energy oscillating in the plane of the wavefront, while the wavefront travels at light speed". (2) the longitudinal photon, in which the energy vibrates along the line of motion of the photon, like an accordion contracting and expanding along that direction of travel as it travels. (3) the time-polarized or "scalar" photon, in which the oscillation is "outside" 3-space and is oscillating in the time-dimension (time-domain).

Thus one has to discover how to make time-polarized EM waves, which do not appear in any straightforward fashion in Western literature. I eventually worked out a proposed mechanism for that (the mechanism remains to be

---

experimentally proven, but I am even surer of it now than when I first discovered it some years ago). At any rate, at least in theory I finally had my required time-polarized EM wave, so that one could "pump" or "squeeze" the mass in the time-domain, and hence do what is required for mass-reversal back through its path through time.

This is NOT "time-travel" in the conventional science fiction sense. In time-travel, the entire universe except the observer would have to be time-reversed back to a previous condition, while the observer continued to age normally (move in his forward time). This does not do that at all. What it does do, is take one piece of the universe and change it back to a previous state. While it is uncomfortable for scientists to think in such terms, nonetheless de-differentiation of cells -- e.g., as rigorously shown by Becker and others -- clearly shows that cells can be "retroregressed" or whatever name one chooses to call "time-reversal". So it is a fact, experimentally demonstrated.

Becker's work, e.g., is applied to cure otherwise intractable bone fractures. Trickle currents or pulsed EM is applied between silver electrodes, one on each side of the fracture. So (1) a potential exists in the area, and (2) a field also exists. Eventually, new cells of the type that make bone are deposited in the fracture and it is healed.

Becker revealed the startling thing that happens. The RED BLOOD CELLS entering the area undergo remarkable changes. First, they shuck their hemoglobin and grow nuclei -- which is dedifferentiation back to a previous state, before they differentiated into red blood cells. Then the re-differentiate (move forward in time) but to the type of cells that make cartilage! However, that is not what is required, so these cells AGAIN re-differentiate (move forward in time) to the type of cells that make bone. These are then deposited in the fracture site, closing the site and healing the fracture.

We worked out the underlying type of unified field effects that would be required for those types of changes. We also worked out a proposed manner in which time-domain pump waves were produced in that fracture site. Interestingly, so long as there was a "difference" between the type of cell being pumped (in this case, the red blood cells in the area), the pumping continued and was therefore continually acting to ELIMINATE THAT DELTA. Hence the changes in the pumped active cells were continually being redirected toward bone cells.

By studying Becker's work and his proposed EM composition of the cellular regeneration system, it became clear that the above mechanism, expanded, was being used by the cellular regeneration system to restore cells. This gave an entirely new function to the potentials in the cells and in their parts. I already knew (from Whittaker's 1903 paper) that the scalar potential is

---

actually comprised of sets of longitudinal EM phase conjugate wave-pairs. From this, it became obvious (if my proposed creating mechanism for producing time-polarized EM waves was correct) that the cellular regeneration system was capable of weakly producing time-polarized EM waves, and hence was capable of "pumping" the cells in the time-domain. And therefore capable of time-reversing the mass-energy of the entire pumped cell.

That's about as simple as I can lay it out.

Hope this helps and perhaps answers the question.  
References and research By Dr. Bearden Reference:  
The Tom Bearden website

### **History of Medical electrotherapy**

*(Roger Green's editorial note: This is different to magnetic pain relief- but some of its principles are similar)*

This is a brief review of the history of electrotherapy. Pain has been relieved by electricity since ancient times, at first by means of applying live electric fish to the tender part to cause numbness. The earliest references to the use of electricity in medicine was the use of the Mediterranean torpedo fish, a variety of electric ray. Aristotle and the historian Pliny both referred to the effect of this fish. Scironius Largus described its application for the treatment of gout. Dioscorides, the famous physician who founded the Western Materia Medica, Galen, and Paul of Aegina advised treatment by electric shock from this fish for the treatment of headache.

In 1650, von Guericke built an electrostatic machine containing a sulfur ball rubbed by hand. The first recorded observation of the use of electricity specifically for medical purposes in Europe was attributed to Kratzenstein, Professor of medicine at Halle. Jallabert, professor of physics at Geneva, is said to have been the first electrotherapist, for in 1747 he effected some improvement in a locksmith's arm that had been paralyzed for 15 years. Jallabert noted that when sparks were drawn from the arm, muscle contractions were noted.

But once frictional machines were found to produce electro-static electricity (Franklinism) in the mid 18th century the use of living organisms was discontinued. By the late 18th century Galvani had rediscovered the fact that animals developed electricity spontaneously.

Volta discovered a chemical means of producing electricity from the first form of battery or voltaic pile without recourse to animal tissues or frictional machines whose efficiency varied with atmospheric conditions. This

---

discovery led to the medical use of direct current (Galvanism). Its ability to cause necrosis by electrolytic means was employed in the destruction of tumours. Galvanism was also applied to needles, hence the first form of electroacupuncture pioneered by Berlioz and Sarlandière. For the first time the combination of electrotherapy and oriental ideas about needling were brought together. Furthermore these early experimenters showed how stimulation of the nervous system brought profound relief from pain.

In the early 19th century Faraday's work on the production of alternating currents and his understanding of electrolysis provided medicine with the escape that was required from the dangers of Galvanism. A variety of safer alternating and interrupted currents (Faradism) have been employed in electrotherapy ever since, particularly in the form of electroacupuncture, TENS (Transcutaneous Electrical Stimulation) and Dorsal Column Stimulation. The popularity of electrotherapy fell during the early part of the 20th century as no one knew how its effects were obtained. However now we know how afferent nerve fibres respond to different frequencies and amplitudes, electrotherapy permits the modern practitioner to stimulate the nervous system in a number of different ways to induce the selective production of various monoamines, amino acids and peptides in the central nervous system. However more experiments are required to make electrotherapy realise its true potential in stimulating the patient's own pain relieving substances.

### *Some electrotherapy pioneers:*

- Benjamin Franklin
- Galvani and Volta
- Michael Faraday
- Andre Ampere and George Ohm
- Nikola Tesla & Georges Lakhovsky
- Royal Raymond Rife
- Frederick Finch Strong, M.D., Tufts Medical School, Boston
- George Crile, Sr.
- Albert Abrams
- Harold Saxton Burr, Ph.D.

## **20th Century**

Royal Raymond Rife was perhaps the most brilliant and persistent scientist in history. Where technology didn't exist, Rife invented it ; the very first micromanipulators, micro-dissectors, and heterodyning ultraviolet microscopes. He won 14 govt. awards for scientific discoveries, and a medical degree (hon.) from the University of Heidelberg .



---

Millionaires like Henry Timken financed Rife's work, such as the Universal Microscope, with its 5,682 parts. With this superb microscope, Royal Raymond Rife became the first human being to actually see a virus. After nearly 20,000 unsuccessful attempts,

Rife finally isolated and identified the human cancer virus, and named it "Cryptocides Primordiales". Rife inoculated 400 lab animals with this virus, created 400 tumors, and then eliminated every cancer tumor by using his instrument to modify its electronic signature. This is all chronicled in "The Cancer Cure That Worked".

Rife used the same technology for other "incurable" diseases. Constructing his own equipment, he painstakingly analyzed the precise energetic signature unique to each. Because the viruses and dwarf bacteria visible to the human eye in Rife's Universal Microscope were alive, stained with light, not dyes, Rife could experiment with precise radio and light frequencies or "wave form healing," and destroy these deadly pathogens under his microscope. By exposing disease organisms to highly modified forms of their own unique electromagnetic pattern of oscillation, Rife discovered he could destroy them (and nothing else) by the millions. How is this possible?

Every biochemical compound oscillates at its own distinct frequency pattern. Therefore, every living thing has its own unique electromagnetic signature, and this pattern is genetically determined--and thus unlike any other species.

Therefore, RIFE THERAPY IS ONE OF THE VERY FEW ANTIMICROBIAL THERAPIES KNOWN TO BE FREE OF ANY SIDE EFFECT. Unfortunately, Rife's scientific theories and method of treatment conflicted with orthodox views and that of Morris Fishbein, then president of the AMA who demanded to own stock in his company. When he refused, his work was stopped and both the research and the treatments were forced underground as the story goes in Barry Lynes book THE CANCER CURE THAT WORKED, FIFTY YEARS OF SUPPRESSION.

And nothing has changed recently. These are just a few of the distinguished medical doctors who have been harassed and persecuted in the last 50 years for discoveries that threatened the health care industry - Doctors Revici's work on nutrition and cancer, (editors note- you must read this book), Dr. Burzynski's work on immune therapy and cancer, Dr. Livingston's findings of cancer pathogens in chicken meat, Dr. Burton's work on immune therapy and cancer, W.F. Koch and Glover's works on Balneology, Coley's and Lincoln's cancer vaccines, Priore and Naessens, both French scientists.

Alternative cancer cures are immensely popular. This is largely due to the failure and expense of conventional cancer treatments. Numerous studies question the value of American-style mainstream medical cancer treatments,

---

and Dr. Andrew Weil freely admits in his books that cancer is one of the diseases that mainstream medicine indeed has trouble handling.

In 1893, Nikola Tesla described in a magazine article the remarkable effects upon himself and his assistants resulting from their exposure to the action of alternating currents of exceedingly high voltage and frequency during some research work. He prophesied that when electrical oscillations were fully understood and applied by physicians that a universal healing agent - one which would so increase the vital energy and resistive reaction of the human body as to enable it to throw off all disease. The high frequency currents, in short, act as vitality boosters - no other form of electricity will do this. Galvanism, Faradism, Static electricity are all valuable agents in the hands of the Electrotherapeutic specialist, but have little direct action in promoting cell vitality and growth, as do the high-frequency currents when properly applied

## **INVESTMENT SUMMARY**

### **Name of Technology:**

Magnetically Activated Plasmas

*Pain relief, healing and regeneration*

### **Company & Registered Offices:**

Breakthru-Technologies NYC

### **Brief Description:**

New technology for non-invasive pain relief, free of side effects that can be used continuously to target pain throughout the body. Based on magnetic cascade, which eliminates pain and speeds healing. Trial testing has been achieved in hospitals.

### **Benefits and Features:**

This device can be utilized to treat chronic pain, current injury and surgical recovery and has been successful in over 90% of patients in four major clinical trials. A 100% of the patients received highly significant pain reduction in FDA trials at the Sierra pain institute of Nevada. Market place entry: Hospitals, alternative healing clinics and private home use

### **Stage of Development:**

Build new prototype

2nd stage clinical trials for FDA approval

### **Investment Opportunity:**

\$500,000 -1M for percentage shareholding

---

**Extra Information:**

Extensive preliminary evidence that PHASE CONJUGATE MAGNETICS can not only reduce pain but also increase healing rate. We understand the physics- because this creates the magnetic environment of restored fractality- precisely the definition of healing in biologic tissue.

Team bio's are supplied to serious enquiries

**Reference:**

**[www.Breakthru-Technologies.com](http://www.Breakthru-Technologies.com)**

**[www.Breakthru-technologies.com/technologies/pain-relief-medical-technology](http://www.Breakthru-technologies.com/technologies/pain-relief-medical-technology)**

**Contact**

Roger Green

[info@breakthru-technologies.com](mailto:info@breakthru-technologies.com)

+1 848 702 3779