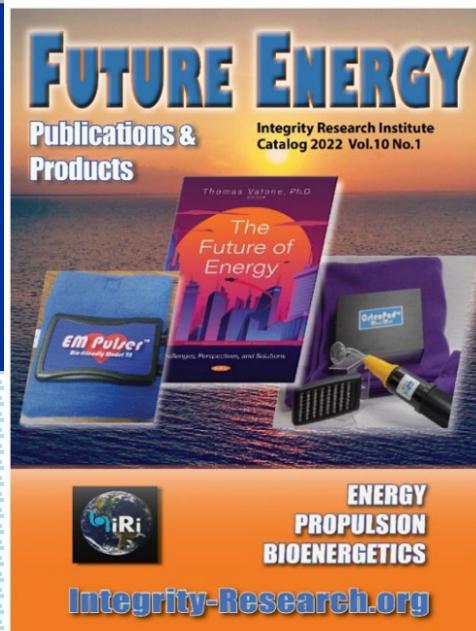
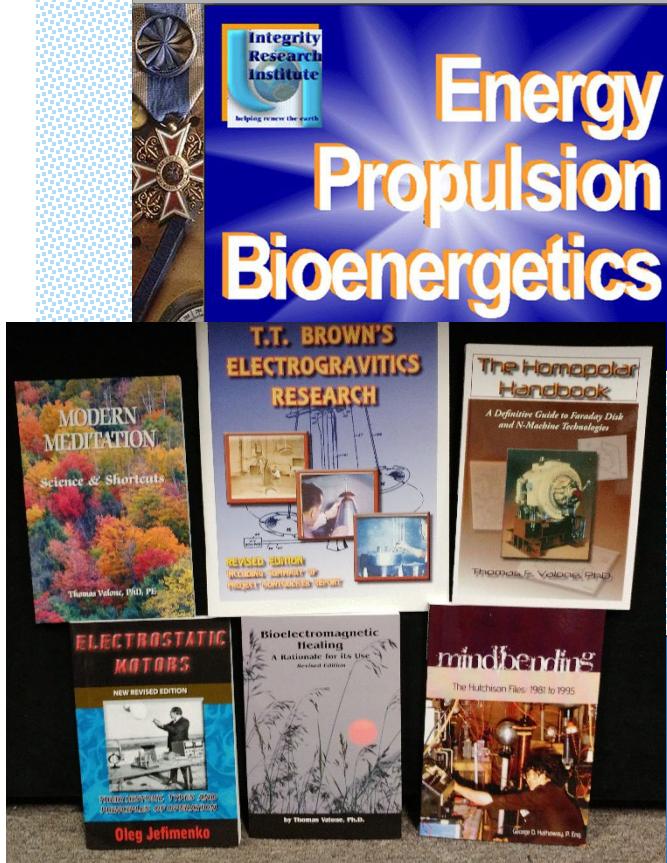




INTEGRITY RESEARCH INSTITUTE



IRI Future Energy Projects



ANNUAL REPORT 2022

CREDITS

Integrity Research Institute wishes to acknowledge the following for her contribution to the IRI Annual Report

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Integrity Research Institute

Annual 2022

Access the electronic version of this Annual 2022 report on IntegrityResearchInstitute.org and also Integrity-Research.org so the Internet links will be live and working for you.

featuring

IRI Financial Summary Report for 2022

Thomas Valone, PhD, Editor

IRI OFFICERS AND DIRECTORS - 2022

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PRESIDENT's LETTER

This past year was very important for IRI programs in the energy, propulsion, and bioenergetics areas. With the analysis by Stanford that 5° to 6°C is the most likely increase in global temperature by 2100, IRI published two significant journal articles on climate solutions advocating carbon capture at the gigaton level, along with renewable energy breakthroughs. We also pioneered a lasting collaboration for our conferences with Steve Elswick at TeslaTech, LLC with his ExtraOrdinary Technology magazine, as well as finalizing the *Proceedings of COFE 1-12* to become Selected Papers from COFE 1-12 with forty (40) papers for our IRS-mandated public education service. The Spiral Magnetic Motor (SMM) is also reaching new operational possibilities. As noted in this Annual Report 2022, we are further researching a magnetic switch at the commutation point using piezoelectric and magnetostrictive materials.

IRI also is getting closer to licensing the intellectual property and the assigned rights to US patent #8,825,174 on Antioxidant Therapeutic Electric Clothing by Dr. Jacqueline Panting, the resident naturopathic doctor on our staff and also applying for a patent on Biosalt Multimineral Electrolyte salt shaker. We also have been successful in marketing an OsteoPad for reversing osteoporosis, osteopenia, and cartilage loss. Our clients have benefitted from reduced healing time for bone knitting of fractures. Our clients have also been obtaining Bone Density Scan tests before and three months after using the OsteoPad each night and their doctors are stating “statistically significant improvements” in bone density www.OsteoPad.org. Thanks to NASA, a “Noninvasive Therapy for Cartilage Regeneration” with high slew rate pulse shaping is the same as our EM Pulser or EM PulsePad products that have been developed based on Dr. Glen Gordon who reversed his congestive heart failure and bicycled across the US afterwards with his prototype model (EMpulse). Medical doctors are now buying from IRI too. www.BioenergyDevice.org.

I may have mentioned in the past newsletters the IRI propulsion projects that were just started two years ago with Mike Gamble (Control Moment Gyro for electrically powered unidirectional force as Boeing has been doing for years on their satellites). Mike has been a presenter at our Conference on Future Energy in the past, so we have DVDs and papers and slideshow from them as well at our COFE events www.futureenergy.org.

Lastly, this IRI Annual Report 2022 is the most valuable and practical bioelectromagnetic concepts that can be packed into one report, including a complete copy of my article in ExtraOrdinary Science & Technology, Jan-March 2022. It is online on our homepage and <http://www.integrityresearchinstitute.org/links.html> with previous IRI Annual Reports in PDF, in order to use any of the hot links which give you a glimpse of the source reference articles and websites that we referenced.

Best wishes to you,

Thomas Valone, PhD, PE
President

HIGHLIGHTS 2022

We are immensely proud of IRI's accomplishments for the past year. Despite the world changing situation due to the COVID pandemic, we were able to carry on most of all our mission goals. With our new Electronic Catalog hosted by Shopify, we were available worldwide. Our *Facebook page*, *Instagram* and *YouTube channel page* have had hundreds of hits. All our programs are easily accessible, filled with videos of our lab, interviews of our President Dr. Valone, videos of our products and historical information such as conferences. We also highlight all our programs, IRI publications, products, and bioenergy devices.

Conferences and Appearances. Still coping with the COVID pandemic restrictions for large gatherings, we did a limited number of in-person events. As seen here, this was "The Natural Living Expo" at the University of Maryland, Marriot Conference Center, where we had our IRI



Booth with all the literature and our latest **PREMIER 4000** high voltage Tesla Energy Chair for attendees to experience. Was an excellent venue for showcasing our bioenergy products and future energy books. Dr Valone had a workshop presentation: "Modern Meditation, Science and Shortcuts".

Many appearances by Dr. Valone were done during 2022 via Zoom including: "Breakthrough Energy Technologies derived from New Paradigm Science" presented at the "Third International

Conference on Science and God (ICSG) , April 11-12, 2022, and the YouTube channel “Steve’s Place”, plus several radio shows, including “The Rob Simone Show” online in April.

We posted my online interview from July 14, 2022 (<https://tinyurl.com/ValoneExopolitics>) this past year with Dr. Michael Salla who led Earth Transformation conferences in Hawaii for years. I was a speaker at his conferences twice in the beautiful surroundings of Kona, the “Big Island” of Hawaii, with an active volcano in the center. You may access my in-depth one-hour interview online, with lots of illustrations. It is also posted on YouTube and on the Integrity website under Videos. The summary of this interview, which was well-researched and expertly orchestrated by Dr. Salla, is also a great biography:

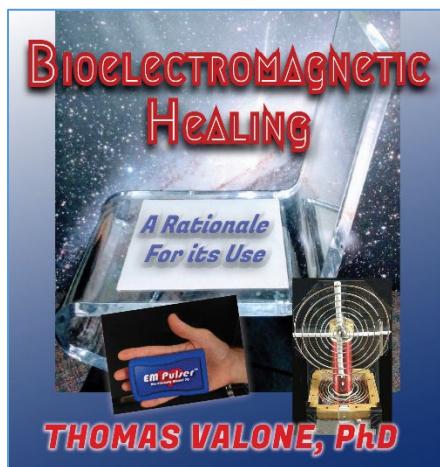
“He began working as a Patent Examiner at the US Patent and Trademark Office (USPTO) in 1996. In 1999, Dr. Valone organized his first Conferences on Future Energy that was scheduled to be held at the US State Department, but led to media controversy when one of the scheduled presenters was to speak about the viability of Cold Fusion technology. The resulting Cold Fusion controversy led to the State Department officially withdrawing its support, forcing the Conference to be relocated to another venue, and his sacking by the USPTO. This led to a six year legal battle, which resulted in him being eventually reinstated in 2005, after gaining his Ph.D. in General Engineering. Dr Valone retired in 2017 after a 20 year career at the USPTO as a federal employee, and began working full time at his non-government organization, the Integrity Research Institute. He has written or edited multiple books dealing with Nikola Tesla, electrogravitic propulsion, electrotherapy, and zero point energy. He has personally invented or assisted in the invention of many breakthrough technologies, which are available at the Integrity Research Institute. In this interview with Dr. Michael Salla, Dr. Valone discusses how he became interested in Future Energy, Nikola Tesla, a century of suppression of breakthrough technologies, the role of the USPTO in this suppression, the controversy over his 1999 Conferences on Future Energy, the creation of his Integrity Research Institute, and some of the breakthrough electrogravitic propulsion, electrotherapy, and zero point energy inventions he has personally worked on or whose development he has supported.”



A publicity fund raising event in 2022 featured the creation of the IRI “Helping Renew the Earth” T-Shirt pictured below. It is a wonderfully soft cool cotton T-Shirt and great in hot weather since it is not made from thick material like some shirts.



IRI Publications and Books: We had a record amount of journal papers, and articles published. Our Annual “Future Energy Annual 2021” was mailed free to our membership. Our latest new report on the value and protection of copper was a bestseller. We are also very proud that we now have our first Audiobook “Bioelectromagnetic Healing: A Rationale for its Use” available on Amazon kindle, and Audible. Our goal for this coming year is to publish more audio book versions of our bestselling books, including *Electrogravitics I and II* as well as *Electrostatic Motors*. We also published multiple journal papers on climate change including: “Breakthrough Energy Technologies toward a Solution for Climate Change” in the *European Journal of Applied Sciences* and “Direct Air Capture and Removal of Gigatons of CO₂ Offers Hope for Climate Recovery” published in the *Journal of Geology, Earth and Marine Sciences*. This concept has become more and more popular in 2021-22, such as with *SciTech Daily*, October 3, 2021 “[Metals Supercharge Method To Bury Billions of Tons of Harmful Carbon Dioxide Under the Sea for Centuries](#)”.





The Bioenergetics Program: The newly designed EM Pulser MODEL78 has been a bestseller since its inception. which now has the following attachments: PulsePad, LED, UV and Magnetic probe. Known as the "Combo," it is popular all over the world, including Europe and South Korea. The **EM Pulser Model 78**, with the earth frequency of 7.8 Hz for cardioprotection, weighs two ounces in a 1" x 2" x 5" case with a sure grip rubber boot for extra comfort! It's portable so you can use

anywhere, powered by battery. At home you can plug in any socket to save battery life. A rechargeable battery included along with the AC adapter/charger. Further on in this Annual Report is the 2022 summary from NASA Tech Briefs regarding their discovery of "cartilage



regeneration" from the same pulse shape as our EM Pulser 78. Our line of PREMIER electrotherapy devices now includes two new devices: the **PREMIER 4000**, also known as The Energy Chair which has many therapeutic benefits and much public appeal. This model has a specially designed acrylic chair, so you can comfortably receive treatments while seated. It has become the favorite of health practitioner, chiropractors and integrative medicine physicians. Our second model is the **PREMIER 2000**, which contains a Lakhovsky concentric circular antenna that is proudly made in our lab and

consists of concentric circles of gold, silver and copper. Also our OsteoPads and MaxiMat models continue to be very popular and effective for bone and cartilage regeneration. We have added now another new addition, the MiniMat, which is a medium sized Mat that is an option for those who do not want a body size Mat like the MaxiMat but wish a larger, twice the size of the OsteoPad.



Future Energy News Program:

Free newsletters, brochures, and reports that include the latest news on energy developments, discoveries and research given to the public. "**Future Energy eNews**" is sent via email, monthly, to over 5000 recipients worldwide, free of charge through Constant Contact email service. This electronic newsletter showcases all the latest emerging eco-friendly technologies that are being developed worldwide and published in Journals, Magazines and Newspapers. Also we published the quarterly IRI Members' Newsletter, and mailed it to all members for free. This Newsletter contains all the latest papers and articles relating to emerging energy technologies. Also we continue to upload to our IRI website the latest information on emerging energy technologies, climate change, and video uploads and press releases. In more local advocacy for safety issues, we published in the *Beltsville News*, October 2022, a Letter to the Editor for a bike



lane and pedestrian walkway to be installed leading to our IRI office adjacent to the USDA from College Park MD to Beltsville MD as currently it is hazardous for anyone to travel on Rhode island Ave, an extremely heavy traffic area, since it lacks both a sidewalk and bike lane.

Zero Point Energy Program. The research continues on the possibility of tapping zero point energy through zero biased diodes. One of our many projects is the “**Quantum Fire Project**” which with Bob DiBiase in partnership with GASE of Berlin Germany. Because the Casimir forces are ultimately the result of quantum effects, If asymmetric forces are observed, it would unleash the most disruptive technology ever seen since humans first harnessed fire. The Casimir equations are very convincing. IRI received some funding this year and preliminary data and tests with suitable polymers have been produced. In Germany, Dr Ludwig along with Bob DeBiase, continue to experiment with many designs to see which is the most effective and efficient. Much research is still being done for this paper and completion is slated for 2024. Also we have some students that are researching many different possibilities with zero biased diodes to harvest ambient energy and we plan to have some papers published when more data is accumulated and reviewed.

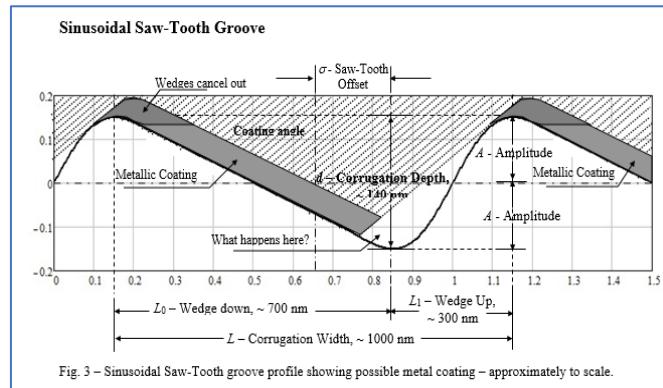
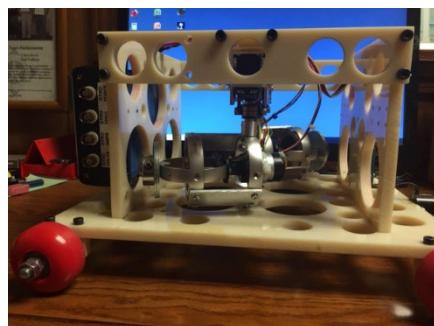


Fig. 3 – Sinusoidal Saw-Tooth groove profile showing possible metal coating – approximately to scale.

Propulsion Program: The **Control Moment Gyro Project** had a milestone this year, with a successful proof of principal model that moved with powered by the scissoring gyros. We continue with more data and measurements being done. Dr Valone

is the principal director along with Mike Gamble a retired aerospace engineer. For years, Inertial Propulsion has been advocated by IRI and now we have replicated a table-top model. The purpose of this experiment is to show that levitation and thrust is possible by scissoring gyros. Initial funding has been provided by our Institute and now we are pleased to say that we have a Sponsor who is providing a substantial amount on financial support to continue with our research.

Regarding our **Spiral Magnetic Motor Project**, we have had some new advancement. Yes, a magnetic gradient has been implemented into a permanent magnet motoring cycle. Now we have built a proper choice of a magnetic switch, which needs professional monitoring and testing. This Spiral Magnetic Motor is designed to provide mechanical drive for electrical power. Peer-reviewed, online <https://tinyurl.com/SMMslides> or <https://tinyurl.com/SMPaper>.



Spiral Magnetic Motor – Progress on IRI Research

Project Low Energy Magnet Switching

Some physicists remind us on science documentaries that electrons in the mountains have been spinning for millions of years. Yet, the key to unlocking zero-point energy and the negative energy of the quantum vacuum is the spinning electrons which create magnetic fields and also the overlooked “**Magnetic Gradient.**” Along with the help of the University of Maryland, Aerospace Department, IRI has also been collaborating with Hathaway International to make a magnetic switch for the **Spiral Magnetic V-Track Motor** or **SMM** for short.

While we use the voltage gradients, thermal gradients, and even gravity gradients all of the time to perform useful work, our world has not mastered the magnetic gradient (a change in magnetic field intensity over a distance of space). The **Spiral Magnetic Motor (SMM)** is just the kind of magnetic gradient motor which is ripe for scientific research today because the practice of energy harvesting is gaining a wide range of possible options. Capitalizing on an ambient source of energy, such as a passing magnet causing a voltage spike with Wiegand wires, will lead to a viable method of magnetic switching for the SMM rotor so that the cycle can be repeated. This is very exciting

for the serious inventor since IRI has shown that 90% of the cycle is already powered by permanent magnets in an SMM. IRI has built many SMM models and published the results in peer-reviewed journals.¹ The next phase of research is to test and optimize the MS-PZT switch by custom designing a piezoelectric transducer for commutation, with a magnetostrictor.

Peer-reviewed journal paper is online <https://tinyurl.com/SMMpaper>. A short video is also posted online: www.tinyurl.com/IndiegogoSMM IRI has been funding the materials for the Spiral

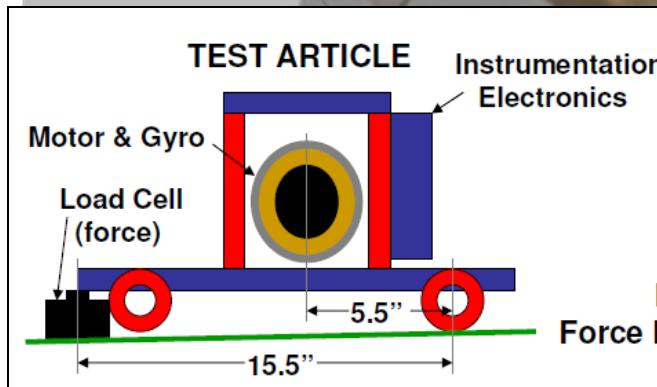
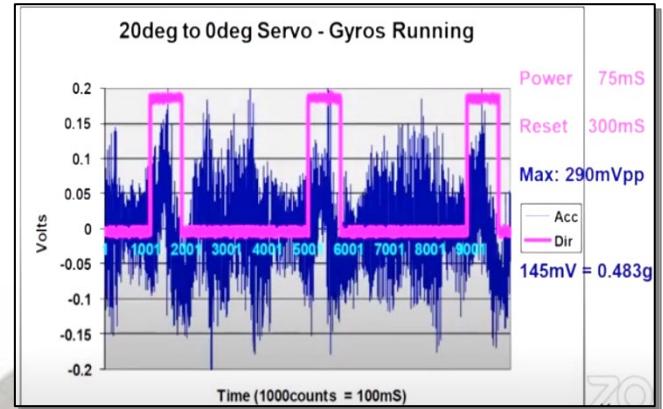
Magnetic Motor Research Project, up until now with the volunteer labor of engineer, Thomas Valone, whose SMM paper has already received popular achievement award notification of “5000 reads” on ResearchGate, from research done with multiple test models of the axial design. The exciting part is that we now have all of the statistics necessary to predict angular momentum, torque, power, and energy production. This helps tremendously for considering energy harvesting for any electronic motion sensor, speedometer, piezoelectric switching controls, etc. The development objectives for this spiral magnetic motor (SMM) and generator project, apply to providing a motor or generator. Both applications utilize an increasing magnetic field strength (gradient) surprisingly present in 90% of the spiral magnetic cycle. An SMM Microturbine will free all the countries of the world from dependence on coal and natural gas, while an SMM Magnetic Motor will supplant oil usage for vehicles, thus raising the standard of living for everyone with long-lasting, clean energy.

¹ “Permanent Magnet Spiral Motor for Magnetic Gradient Energy Utilization: Axial Magnetic Field” Presented to the *Space, Propulsion & Energy Sciences International Forum (SPESIF)*, February 23-26, 2010, Applied Physics Lab – Johns Hopkins University, sponsored by the American Institute of Physics

Control Moment Gyroscope – IRI CMG Project Continues in 2022

with Breakthrough by Designing a Larger Set of Gyroscopes and Servos

Project Engineer Mike Gamble proved during his COFE12 talk that he can make inertial propulsion work to move a cart on a flat surface! While the basic design (copying Boeing's room size CMG in photo), uses only two gyros in a tabletop version with a 2" pair of gyroscopes, the next phase during 2021 involved a 4" pair of gyro designs to increase the force. His calculated prediction and measured load cell forces (left) match each other within 10% accuracy, producing about 0.55 lb. of peak force, up from 0.4 lb. of force on the first model (see 2019 IRI Annual Report). In that respect, the new design (above) uses plastic for light weight sturdy frame **with NO power to the wheels!** See Mike's COFE12 electric propulsion slideshow and demo online at: <https://tinyurl.com/GambleCOFE12>



nce on Future Energy - COFE12 Aug. 14, 2020 Friday



Breakthrough Energy Technologies Toward a Solution for Climatic Change

Thomas F. Valone

Integrity Research Institute, Beltsville MD, USA

ABSTRACT

In this age of climate change, the corporate, academic, and government research into new, green sources of power and energy still has not been well-funded nor forthcoming in this century. This presentation will review some of the best emerging energy technologies that promise green and carbon-free sustainable generation as well as food and water energy innovations, including a bioenergetics discovery. Progress is being made presently by academic and industry that will create a future having greater ease in newly developed renewable energy generation with much better, localized energy sources that do not use fossil fuel for power and heat. Beyond the realm of fuel cells and wind power is the non-conventional world of emerging energy technologies. Some of the best examples are new and exciting generators that release trapped potential energy from nature in ways never dreamed of before. Others innovatively apply clean fuels in conventional systems that are the focus of attention for NASA, DARPA, and the USDOE. Some of the more exotic examples include a recent breakthrough with graphene energy harvesting, which has thermal and nonthermal (quantum vacuum) sources to it. This illustrated slideshow presentation summarizes the research that has been accomplished so far in the development of highly efficient, energy harvesting inventions, as well as other future energy breakthroughs. The most exciting reason for the interest in this area of research is the promise that it holds for boosting electric vehicle production by providing an onboard electric battery charger. These energy generation developments, derived from relatively new paradigm science discoveries, also have many other applications, including a design for rural stand-alone electrical generators. Most of them have one thing in common: they are relatively unknown to the general public.

INTRODUCTION

Motivation for researching new energy include: 1) global warming adding 1°C every 20 years due to CO₂ buildup in the air which traps heat (See www.TinyURL.com/CO2HEAT), 2) resources for food and drink with 11 billion people expected by 2100, and 3) making a personal note that in my lifetime, since 1950 around the time that I was born,

- Population has tripled (3x)
- Carbon Emissions have quadrupled (4x)
- Energy Demand or Consumption has quintupled (5x).

Therefore, there is little debate among scientists and the public that we need new energy developments to save humanity with such runaway trends worldwide.

Research Article

Direct Air Capture and Removal of Gigatons of CO₂ Offers Hope for Climate Recovery

Thomas F. Valone PhD*

Integrity Research Institute

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Abstract

The Summer of 2022 caused China's heat wave to shatter records, bringing the country's hydropower electricity into question, while in the U.S. it delivered five 1,000-year rain events in five weeks to several Midwest states.¹ It is proposed that the linear, inextricably tight correlation between global CO₂ values and global temperature, delineated and publicized by James Hansen and others, will finally create an urgency in the minds and hearts of all people, so that international direct air carbon capture by the gigaton can begin in earnest and in parallel with carbon-free fuels, zero carbon emissions, renewable energy, and even negative carbon emissions, implemented worldwide. This dual track proposal can immediately begin the reversal of global temperature in direct proportion to the decrease in the excess, heat-trapping atmospheric CO₂. In that way, more time will be allocated for the world to convert to 100% renewable energy and thus begin to drastically reduce its carbon emissions, which add about 40 gigatons of CO₂ to the air blanket above us every year. The second phase of the X-Prize Carbon Removal for the 2022 million dollar candidates, among other industrial processes already in motion, will demonstrate novel and inexpensive methods for capturing billions of tons of atmospheric carbon dioxide for permanent removal in 2025. This contest adds to other hopeful signs for global reversal of temperature and sea level rise.

Introduction

As global warming becomes more pronounced, obvious, and severe, the term "climate emergency" is re-emerging as a clarion call. Bill McGuire, author of *Hothouse Earth: An Inhabitant's Guide*, says we need to be "hard-hitting enough to galvanize action and trigger behavioral change" with the aftermath of wildfires and floods [1,2]. Others, such as Professor Naomi Oreskes from Harvard University, have a more pessimistic view of "Wishful Thinking in Climate Science" since many programs around the world have small throughput, high cost per ton, or have simply been canceled after millions spent on the attempt [3]. Adam Vaughan agrees, noting that most major carbon capture and storage projects have not met their targets [4]. Meanwhile, the Amazon rainforest may have reached a crucial tipping point which will turn forest into a savannah according to a recent report from nine countries and territories that encompass the Amazon region [5]. Therefore, we need to have a "longtermism" attitude instead of a dystopian view, according to Professor William MacAskill, author of *What We Owe the Future*, as he insists that "improving the world for future generations is one of humanity's most pressing tasks that urgently demand our attention" [6]. My work in this area [7-9] has focused on the stellar work by James Hansen, who in 1988 was the first to predict a global "greenhouse effect" from a 3-D model developed at the NASA Goddard Institute for Space Studies but using the onerous phrase "climate forcing" [10]. Since such a concept was not yet accepted by the public, the paper was shunned by academic critics and Hansen was declared to be "wrong" by most of the media at the time, threatened to lose his job, and generally criticized by everyone. In Figure 1, a slide from one of my presentations (ref. 7), offers a reproduction of Hansen's now famous climate graph of the

earth's 400,000 year history, including the surprisingly overlapping plots of global temperature, CO₂ and sea levels, along with a corroborating NOAA graph for the same period of time.

In 1999, the Vostok ice core 420,000-year record of carbon dioxide was published by Petit et al. [11]. Exhibiting great stability, the CO₂ levels clearly have never exceeded 290 ppm worldwide even through four ice ages. However, in the isolated monitoring station cited above for our modern, with our wanton fossil fuel carnage, the latest global carbon dioxide levels have now exceeded 410 ppm, with apparent disregard for the consequences. Notice in Figure 1 the important clearly tight correlation of temperature (blue graph) and carbon dioxide (red graph) for the past 420,000 years, which leads us to the obvious problem of the red line at the far-right side (present time), which extends dramatically above the maximum seen in the graph for the past 400,000 years. We are forced to admit the historic red and blue data lines don't lie, so the axis label of CO₂ concentration on the left necessarily correlate to the axis label of global temperature on the right. This is the most important realization that arises from Hansen's Table of vertical axis variables that are found in this 2006 MIT *Technology Review* article [12]. While climatologists know this relationship exists, the United Nations Environmental Program (UNEP) and the International Panel on Climate Change (IPCC) among others are slow to realize the consequences of the present CO₂ excess, which now surpasses 40% of the maximum 290 ppm the earth has ever experienced in over 420,000 years. The Hansen Equation that emerges from his Table of data becomes the key with:

$$(+/-) 20 \text{ ppm of CO}_2 = 1^\circ\text{C} = 20 \text{ m change in sea level. Eq. (1).}$$

IRI's EM Pulser 78 Gets Boost from *NASA Tech Briefs* - Nov. 2022

Integrity Research Institute finds that [the IRI OsteoPad](#) with a 7.8 Hz slew rate (rise and fall times for the pulsed, time-varying magnetic signal) anticipated this "new" discovery of NASA, designed to be within the NASA frequency range for efficacy, and can therefore, now claim to **regenerate cartilage**. Our OsteoPad's pulse rate also matches the earth's **Schumann Resonance**, which is 7.8 Hertz and biocompatible. The other surprise is that our OsteoPad is capable of being "wrapped around synovial joints where cartilage-degrading inflammation is located" exactly as NASA predicts in the article below.

TECH BRIEFS ENGINEERING SOLUTIONS FOR DESIGN & MANUFACTURING

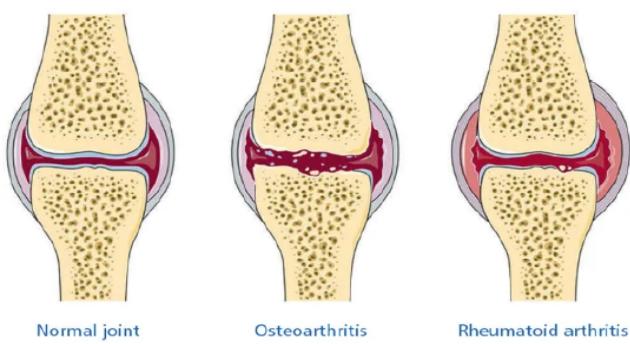
NOVEMBER 1, 2022 | MEDICAL [TB/TOPICS/HEALTH-MEDICINE-BIOTECHNOLOGY]

Noninvasive Therapy for Cartilage Regeneration

A device that can alleviate cartilage degradation in synovial joints by promoting the growth of new cartilage.

Johnson Space Center, Houston, TX

Osteoarthritis and rheumatoid arthritis



A comparison of healthy and inflamed synovial joints. (Image: NASA)

Innovators at NASA Johnson Space Center researching **time-variance magnetic field** (TVMF) therapies have developed a pulsed electromagnetic field (PEMF) device that can alleviate cartilage degradation in synovial joints by promoting the growth of new cartilage.

Joint disorders result in intense pain. Noninvasive and painless regeneration of a patient's own tissue offers fewer side-effects than surgical joint replacement or tissue engineering procedures. The PEMF device **could be wrapped around synovial joints** where cartilage-degrading inflammation is located.

Frequencies were generally low, ranging from 6-500 Hz, and the **waveforms used high rising and falling slew rates** on the order of Tesla/sec, **promoting pulses** or bursts. Cellular catabolic and anabolic gene expression analyses comprised of fold-change were accomplished by a survey of 47,000 human genes using an AFFYMETRIX Gene Array. Results show that variation of waveform used in PEMF therapies, independent of flux intensity, influences genetic regulation of HCH from patients with early-stage osteoarthritis. The device has potential to be used in the **treatment of cartilage degenerative joint disorders** in patients resulting from rheumatism, trauma, or surgery.

Our EM Pulser 78 improves memory with long lasting effects

[Nature Neuroscience](#) (August 2022) reports “repetitive (4-day) transcranial alternating current stimulation (tACS) protocols for the selective, sustainable enhancement of

auditory-verbal working memory and long-term memory in 65–88-year-old people.”



Experiment #1, IRI reproduced the protocol shown on the monitor (from Nature, Aug. 2022) with the EM Pulser for working memory improvement

Our [EM PULSER](#) does this for you! For us seniors, this is good news, with “preferentially improved long-term memory on days 2–4 and 1 month after intervention.” So with my Sherlock Holmes hat on, I decided to investigate what neuromodulation of “synchronous low frequency” the Boston University scientists were using. Their focus was simple: (1) **Working Memory (WM)** for brief information

storage and (2) **Long Term Memory (LTM)** for sustained maintenance of information. They did stimulate for 20 minutes, four days in a row, and tested for a month afterward. The findings are remarkable and reproducible with the [IRI EM Pulser 78](#), which has a 7.8 Hz Schumann Resonance pulse rate. See complete article online at <https://doi.org/10.1038/s41593-022-01132-3>.

The first protocol used by the scientists was to electrode the left side of the skull (IPL), focusing on the spot above the ear with a theta brainwave 4 Hz pulse rate to stimulate WM. Many of us know that many electrode(s) to the body experiment has often resulted in noninvasive improvements with magnetic pulsing instead (which causes internal electric currents by Faraday’s Law). The bone healing research of Drs. Bassett, Pilla, and Becker are the prime example that I always cite as medical doctors who preferred the noninvasive magnetic coil pulsing over electrodes. Therefore, also knowing that 8 Hz is the first harmonic of 4 Hz, we can scientifically and confidently apply our EM Pulser 78 to the same spot on the skull for 20 minutes per day, four days in a row, to get very similar results. See the EM Pulser 78 on the left side of my head with the supplied Velcro headband.



Experiment #2. IRI reproduced an equivalent setup with the EM Pulser 78 for Long Term Memory (LTM) improvement. The second protocol at Boston University was to electrode the left front of the forehead focusing on the spot above the left eye with a 60 Hz pulse rate for LTM. Here, a little research reveals that the gamma brainwaves vary a lot more and average about 40 Hz, which is the fifth harmonic of 8 Hz, so the application of an 8 Hz magnetic pulse on the left forehead may approximate the more involved electrode placement over the forehead and skull. This is accomplished with the EM Pulser 78 placed on the left forehead above the eye with the same Velcro strap.

For those who already have the EM Pulser 78 you are invited to let us know if this additional use for improving memory helped you.

Published in [Nature Neuroscience](#), August 2022



Nanosecond Pulsed Electromagnetic Field Therapy Resonates with Earth to be Bio-Friendly

Thomas F. Valone, PhD, PE

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Background of Earth Resonance

Not everyone knows that Nikola Tesla discovered the phenomenon known as the Schumann Resonance of 7.8 Hertz while in Colorado Springs in 1899, fifty three years before W.O. Schumann got credit for it.¹ What should be called the Tesla-Schumann Resonance is the fundamental electromagnetic frequency of the earth-ionosphere cavity and has lots of benefits for humans, animals, and even plants.²

In Figure 1, we see the fundamental mode and the first harmonic (2nd mode) of the earth's natural resonance, as stimulated by thousands of lightning strikes worldwide. It also has been subject to extensive mathematical analysis using a spherical capacitor model.³ As this author announced on September 15, 1987 to the Mechanical Failures Prevention Group at the National Bureau of Standards, Gaithersburg MD, the simplest way to understand the fundamental Schumann resonant frequency is to take the speed of light (also the speed of electromagnetic waves) at 186,000 miles per second and divide by the circumference of the earth, which is around 24,000 miles. This yields the 7.8 Hz frequency based on the wavelength circling the earth, as seen in n=1 of Figure 1.⁴

How are the earth's extremely low frequency (ELF) waves related to humans? The answer is that we

have evolved in the earth's static and dynamic magnetic fields for hundreds of thousands of years. This no doubt directly contributed to the adaptation of the human brain's fundamental frequency to resonating with the Tesla-Schumann frequency and responding to various forms of magnetic therapy.

The fundamental brain resonance is exhibited whenever we close our eyes to produce alpha waves (alpha rhythm) which, on the average, is in the same frequency range as the earth's fundamental resonant mode (8-10 Hz) and so may have been a

result of their cohabitation. In fact, Dr. Robert Becker in *The Body Electric* (1985) cites an experiment conducted by the Max Planck Institute in Germany in which Dr. Rutger Wever found that after totally desynchronizing subjects' biorhythms (metabolic and circadian), the introduction of a weak 10 Hz field (2.5 V/m) "dramatically restored normal patterns to most of the biological measurements." Wever concluded that "this frequency in the micropulsations of the earth's

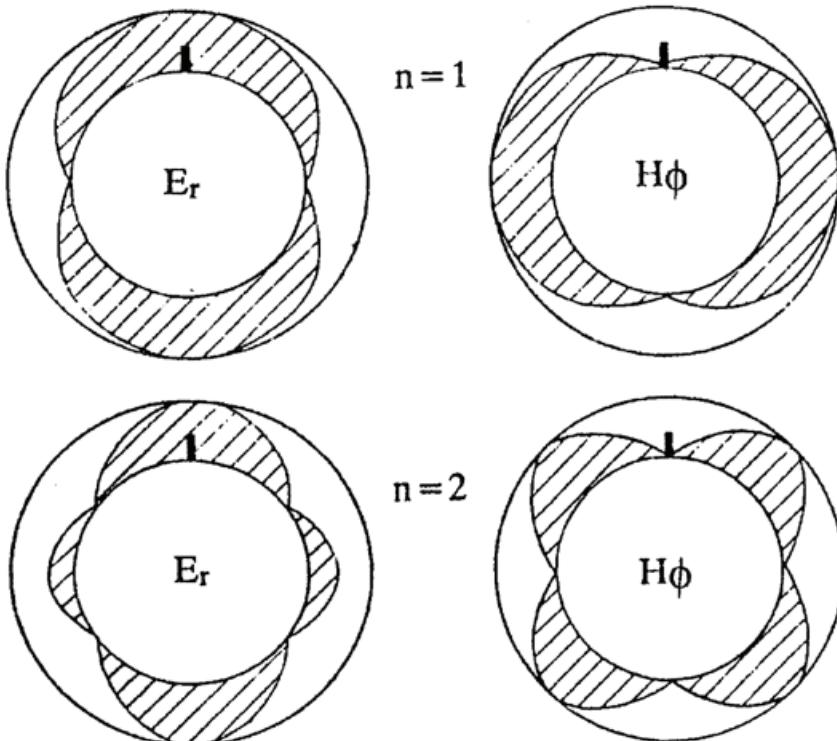


Fig.1: Earth-ionosphere cavity resonances, 1st & 2nd modes

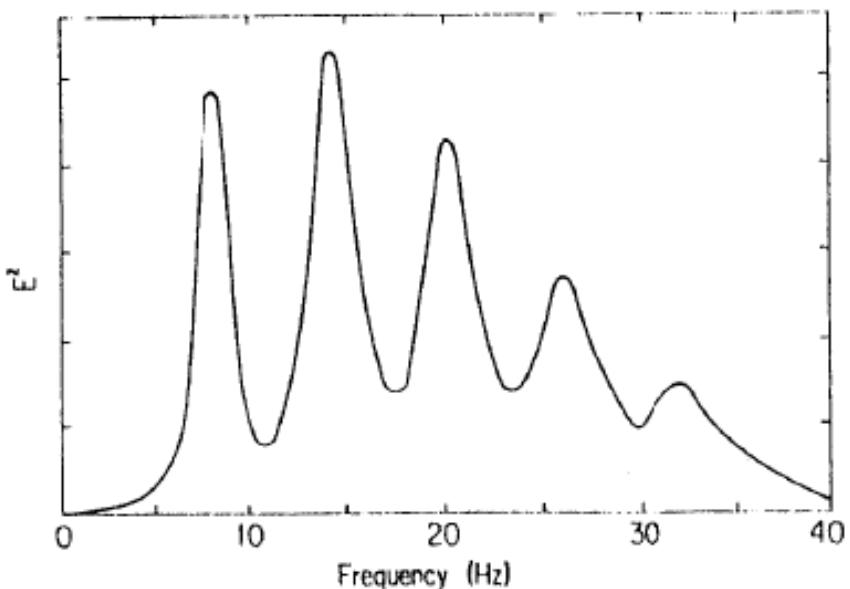


Fig.2: Schumann resonances for the vertical electric field

electromagnetic field was the prime timer of biocycles.”⁵ It should also be mentioned that in a study done at the Naval Research Lab by Dr. Eldon Byrd, certain ELF frequencies not only entrained rats’ EEGs but also induced specific mood and behavior changes.⁶

Extremely Low Frequency (ELF) Electromagnetism

Besides the earth-ionosphere cavity resonances and pulsations, there are lots of man-made sources of ELF such as electric power lines, appliances, automobile engines, and sub-harmonics of computers,

etc. In this article, we are focusing on ELF magnetic fields which by their nature, pass right through the body without appreciable attenuation with a skin depth > 50 meters.⁷ However, even without magnetic properties or permeability, living tissue still responds to oscillating magnetic fields and static magnetic fields.

The main mechanism for this response is Faraday’s Law that describes an induced endogenous electric current for an exogenous changing magnetic field. Dr. Robert Becker also cites, in his book men-

tioned above, a possible interaction of strong static magnetic fields and neuron electric pulses which could induce analgesia by the Hall Effect. Amplitude and frequency windows have been shown to exist for many biological effects of ELF magnetic fields.⁸

Lightning Strikes Drive the Tesla-Schumann Oscillations

Every second there are about 100 lightning strikes on the earth, amounting to about 8 million strikes per day and billions every year.⁹ Such high voltage exposure, up to a thousand volts per meter in an electrically charged atmosphere such as Colorado Springs CO where Nikola Tesla did much of his wireless transmission of power research, is a beneficial boost to the transmembrane potential (TMP) of each cell in the human body, which normally can store about 10 megavolts per meter across each cell membrane.¹⁰

Lightning has been estimated to reach billions of volts and produce lots of negative ions as well as clean ozone that oxidizes pollutants such as hydrocarbon fumes from internal combustion engines. The fresh air smell after a thunderstorm is a direct proof of the normal 0.04 ppm amount of ozone, which this



Fig.3: Lightning strikes of 100 per second worldwide are beneficial to living systems

author actually measured in Colorado Springs air years ago during an International Tesla Society conference. (Indoor air unfortunately has zero amount of ozone, so bacteria, viruses, mold, and mildew are encouraged to grow without limit – visit www.BioenergyDevice.org for IRI air purifiers.)

Such proliferous numbers of lightning strikes worldwide provide the electrical voltage pulsed driver for continuous spherical cavity oscillations between the ground and the ionosphere which is equivalent to a spherical capacitor the size of the earth, resonating at the Schumann frequency of 7.8 Hertz. Out in nature, away from municipal electropollution, our brain's alpha rhythm also gets in tune to the Schumann frequency and probably in phase with it too.

Free Radicals as Universal Health Hazards

Without dwelling too much on all of the ELF effects that have been discovered, is it possible in the city environment, that we can locally induce the Schumann Resonant frequency with magnetic pulsations of 7.8 Hz that may be beneficial to the human body? Below are excerpts from Dr. Glen Gordon's article, "Beating Free Radicals: The Basis for Injury, Illness, and Death" which sets the stage for his discovery of a special type of magnetic therapy.¹¹

Free radicals are deadly chemicals formed in your body when stress, illness, or injury causes ischemia or diminished blood supply to tissues. Insidious as excessive eating that squeezes capillaries or as gross as a severed artery, ischemia is scalar as to amount of involvement but the path to cell death for each cell is the same. From local injury to massive trauma, heart attack or stroke, wherever one sees pain, shock, coma or death, all are free radical mediated.

Mitochondria are cell structures that convert food to energy called "high energy phosphate" or ATP in the presence of oxygen, which releases carbon dioxide and water. If not receiving enough blood supply of oxygen, mitochondria "scorch" oxygen which now becomes a dangerous "free radical". This changed oxygen that once made life possible can now take life away, cause cancer, or break apart DNA to create malformations and a lot of other bad events in our body. Normal high-energy phosphate formation releases a few free radicals, which are responsible for DNA damage that causes aging.

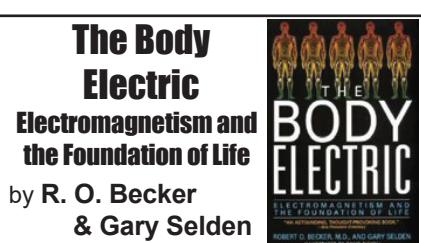
Why do free radicals exist?

When humans initially occupied earth, the threat was infection regardless of initial injury. Free radicals evolved to liquefy tissues housing the infection ergo acidosis, which is ideal for solubilizing meat as in gastric acid. They had to localize the bacteria and their toxins thus decreased blood pressure, blanched tissues, and shock. Lastly, they had to block off access to the main body and thus prevent coagulopathy.

The main functions then are acidosis, drop in blood pressure, and blood clotting -- a scorched earth policy if ever there was one! Their redeeming quality: they will sacrifice a thumb to save the hand and turn the infected area of the thumb into "laudable pus", which gets rid of the offender before it kills the offended. Today the number two killer in the first two hours in Iraq consists of:

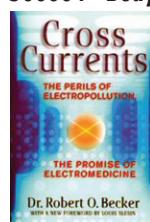
1. Acidosis
2. Shock
3. Blood clots,

This condition is jointly spoken of as "The Lethal Triad" -- pure free radical chemistry killing our sons and daughters using a million years old formula.



Dr. Becker, a pioneer in regeneration, challenges established mechanistic understanding of the body. Clues to the healing process were in discarded 18th century vitalist theories based on the premise that electricity is vital to life. Despite the promise of his work, the possibility of regenerating human limbs and organs raised the hackles of establishment physicians. As his understanding of electrical forces led him to alert the public to their possible effects on the environment, the establishment erected a higher wall of resistance. He explores pathways for understanding evolution, acupuncture, psychic phenomena, and cancer. (352 pp)

50004 - Body Electric 14.99



Cross Currents

The Perils of Electropollution

The Promise of Electromedicine

by Robert Becker MD

Two opposing trends are colliding: the rapid rise of electromedicine, promising to unlock secrets of healing, and the rise of electropollution posing an environmental danger. The first is a story of hope, the second a cry of alarm. Together, they link human health and our environment. The concept of "life energy" is traced to its roots showing how early medicine became Scientific and then Technological Medicine with life reduced to chemistry and humans to machines! He recounts development of Energy Medicine and its promise. Electromagnetism's dark side is explored with countermeasures to reduce electropollution effects. (336 pp)

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Lakhovsky MultipleWave Oscillator Handbook

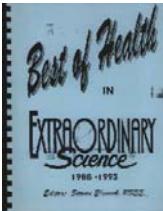
by Tom Brown

About 1900, Georges Lakhovsky indicated living cells can be regenerated by applying energy fields of multiple wavelengths. This is a primary source of construction details for Lakhovsky's original MWO. Includes circuit diagrams and photos taken at Lakhovsky's home, how to info on different devices, and reports by MWO builders. From simple copper coil experiments stimulating plant growth to different circuits and antenna patterns used in cellular regeneration research, this is The Book for experimenters/researchers. (GBC;160pp)

370002- MWO Hndbook .. 29.95

Best of Health in ExtraOrdinary Science

Steven Elswick Ed.



This collection of medical and health-related articles from the former Int'l Tesla Society's magazine includes articles on possible cures for cancer, light and light therapies, 714X, violet rays, Rife devices, and ways to alleviate the ill effects of modern life (sick house syndrome), electromagnetic radiation, aspartame, vaccinations, fluoridation, and more!... a primer on suppressed health issues, alternatives, and modern health hazards. (GBC)

290005-ES Best Health .. \$19.95

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How do we get rid of them?

Don't be fooled by propaganda, the only chemicals known to neutralize free radicals are antioxidants. While Vitamin C, D, E and others are important, most important are protein antioxidants our body makes to protect against free radicals and electrotherapy (or "electron therapy"). It's smart to maintain a good supplement schedule even though our natively formed protein antioxidants do much more and electrons themselves are antioxidants that quench free radicals and stop them from creating a chain reaction of forming other free radicals. As far as supplements, no one walked his talk better than Linus Pauling who took several grams of Vitamin C daily, and in spite of a busy life that saw him win two Nobel prizes, he died in his sleep at 93 years of age.

Dr. Gordon here emphasizes that unfortunately, free radical neutralization by antioxidants is highly inefficient since it relies on random collision between the antioxidants and free radicals to stop the damage, and when a collision occurs the desired neutralization may fail because a specific alignment is required in addition to "the bump in the night".

Electrotherapy is more efficient and can be targeted to the area where electrons are activated to target free radicals. Following injury and illness, the body produces free radicals far more rapidly than antioxidants can neutralize them. The injury zone widens and the illness worsens while we attempt other means to change the balance, e.g. antibiotics, fluids, blankets -- anything! Too many drugs used in trauma care also impair healing and contribute to higher death rates. Anti-inflammatory drugs, cortisone, local anesthetics, and narcotics are among these agents.

The Natural Balance - Antioxidants and Electromagnetism

Antioxidants and free radicals are part of a huge group of paramagnetic compounds that are known to respond to appropriate electromagnetic (EM) fields. Today, we can design EM fields that very efficiently "line up" free radicals and antioxidants like a key in a lock. This alignment concept was first described by Svante Arrhenius, a Swedish genius who studied physics and won the 1903 Nobel prize in chemistry.

Each antioxidant can neutralize numerous free radicals converting them to harmless waste products of water and carbon dioxide for which our body intended them before the wheels came off. Scientists calculate that pulsed electromagnetic fields increase protein antioxidant efficacy a hundredfold when initiated immediately.

Dr. Gordon goes on to say,

The next time you experience an injury or illness, don't take drugs or attempt excessive supplementation; reach for The Natural Balance Brigade and quench free radicals **with a pulse of electromagnetic energy**. As for supplements, they are best taken regularly over time to assure adequate tissue levels; excessive ingestion enriches your urine and does nothing for tissue levels. The advantages are that using drugs doesn't end with just lining these bad actors up.

A year or so ago I discovered that proteins including antioxidants use electromagnetic energy to initiate a computer-like information system that enhances the tempo of their changes in shape to dramatically enhance neutralization of free radicals.¹² You have minutes to a few scant hours to neutralize free radicals or they incite 'the inflammatory cascade' following which cells will die, and that can be followed



Fig.4: IRI latest EM Pulser Model 78 with a 7.8 Hz pulse rate, as with Dr. Gordon's early model

by coma and death at rates one can hardly believe.

What of the Universal Force... ... Electromagnetism?

Electromagnetic waves swept over our planet as a result of solar flares and lightning since our solar system began; scientists speak of these waves as "forcers" that proteins respond to, a natural balance that saw proteins driven forward to form more complex assemblies and finally life. It was in this symphony of electric signals that life evolved and diurnal rhythm was set into motion, the life-sustaining symphony we see today. In composite, these electromagnetic waves are the Tesla-Schumann Resonance, which was first described publicly in the 1950s and continues to generate great interest in many fields including medicine.

We can think of protein antioxidants as two large and two small baseball gloves tied together side-to-side by spring-loaded molecules uniquely capable of responding to electromagnetic fields that spur on the big gloves to trap free radicals and toss them into the smaller gloves where they are reduced to water and carbon dioxide. If applied early enough and rapid enough, the injury hardly takes place. As an example, we can look at the immediate pain and swelling of a bee sting as the toxins, themselves super-radicals, incite free radicals and other inflammatory chemicals. When applied immediately, there's no pain, no swelling, and minimal redness.

We have personally witnessed this avoidance of inflammation, causing black and blue swelling when my wife hit her tibia on a metal chair after slipping off. We immediately tried using the *EM Pulser* described below for twenty minutes on her right leg instead of ice and she had no swelling or black and blue discoloration at all, which was really amazing. Even the pain subsided as well. However, her left knee became black and blue for a few days after she ignored that one since it didn't hurt as bad!

Practical Implementation of the Gordon Protocol for Electrotherapy

Ever since we saw Glen Gordon, MD speak at our *Second International Conference on Future Energy (COFE2)* in 2006, describing the use of his original nanosecond rise time *EMpulse* to reverse his own congestive heart failure, my wife and I have been hooked on reproducing his device after he added ten more productive years to his life and bicycled across the country to celebrate, appearing on radio and TV shows on the way. This effort of ours resulted in several early models of our *EM Pulser* which retained a nanosecond rise of the pulsed magnetic field. However, in 2020 we succeeded in producing a unique circuit that averages 7.8 Hz +/- 2%

tolerance with special electronics and a small but powerful magnetic inductor. We even added design feature that allows one to actually see the oscillating 7.8 Hz signal that is also connected to a green LED on the end panel with a noticeable flickering.

We also added a special AC Recharger, custom-made from overseas. Our AC Recharger will change its own tiny LED color on the recharging device from red to green when the battery is fully charged, thus safely reducing the incoming voltage which goes directly to the battery when the AC Recharger is attached. The *EM Pulser Model 78* (named for the frequency of 7.8 Hz) draws only 14 mA during normal use and so the Li-Ion battery will last about 36 hours in continuous use, which is very convenient for most people. The customer will receive a charged 9V battery and an AC Recharger, so they can charge the battery without taking it out of the case.

The rise time on this newest model is in the nanosecond range, less than 100 ns which, according to the NASA Study, will make it very effective at stimulating the **heat shock protein (HSP 70)** locally, which Dr. Gordon found to be the main benefit of locally using this type of pulsed electromagnetic fields (PEMF).¹³

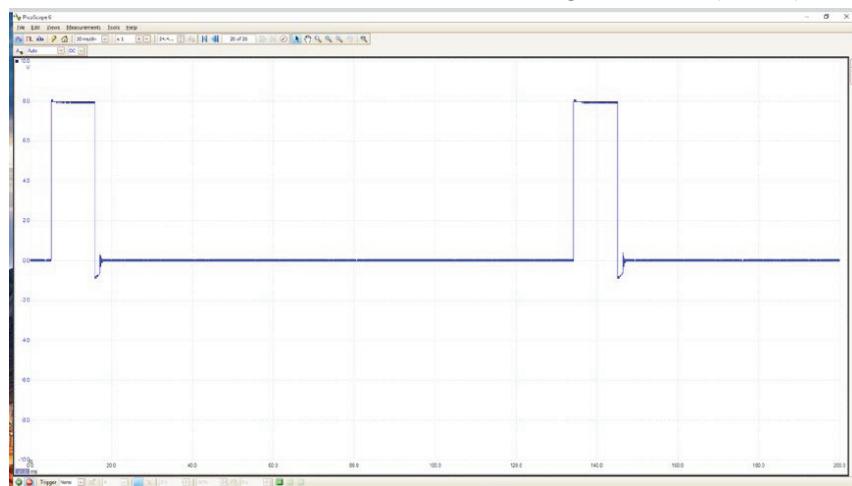
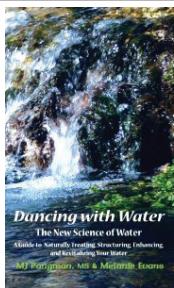


Fig.5: Recorded waveform trace of the actual output of the EM Pulser Model 78 into the coil inductor



Dancing with Water

The New Science of Water

MJ Pangman, MS
& Melanie Evans

This work accomplishes what no other book has attempted—the blending of science with esoteric wisdom that has survived the ages. *Dancing with Water* introduces the New Science of Water, leading the way to a more complete understanding of water's liquid crystalline phase and of its biological significance. While satisfying the need for scientific accuracy, this is a compelling treatise for any reader who is truly interested in understanding the depth of their relationship with water.

Many of water's unique properties are explained by examining its liquid crystalline structure. This long-needed reference provides credibility for many ideas and practices that have long been viewed with skepticism. It discusses the memory-retentive ability of liquid crystalline water; also its ability to transmit energy and information. There is insight into the effects of electromagnetic fields, crystals, salts, and the importance of hydrogen in water.

This guide is intended to educate and enlighten the reader, but it is much more. Part I lays the foundation and the scientific basis. Part II provides instructions so that anyone can naturally, treat, structure, energize, and revitalize their water. Whether you are a water enthusiast, a health practitioner, a scientist, or a lover of the natural sciences, *Dancing with Water* will touch your soul and it will guide you as you enter a unique and inspiring new relationship with water. This fascinating book explains complex subjects in easy-to-understand language. (250pp)

593100- Dancing with Water 17.95

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Heat shock protein is a chaperone protein that heals, restores, and counters inflammation directly. It is so effective that a whole book has been written describing it completely.¹⁴ (IRI supplies Chapter 2 “The Functions of HSP70 in Normal Cells” to everyone who purchases the new *EM Pulser Model 78* from www.BioenergyDevice.org).

Figure 5 shows a remarkably rapid rise of the rectangular pulse, which when expanded into microsecond time scale, shows a nanosecond rise time. Furthermore, with the diamond marker on the left indicating 0.0 ms, the period of the pulse is seen to be $134.2 \text{ ms} - 5.3 \text{ ms} = 128.9 \text{ ms}$ which when inverted for frequency, yields 7.75 or rounded off to a 7.8 Hz pulse rate that is the Schumann Resonant frequency.

Why this is important has recently been lifted from folk lore to scientific study with two recent journal articles. The first one from *Nature Scientific Reports* announces an impressive “Cardioprotection from stress conditions by weak magnetic fields in the Schumann Resonance band”¹⁵ This is an open access journal article available at www.nature.com/scientificreports with author Elhalel et al. published Feb 7, 2019.



Fig.6: Dr. Gordon from lecture DVD

What is interesting about this breakthrough study is that the **7.6 Hz to 8.0 Hz** was found to be the active frequency range that was most effective for Cardioprotection and the magnetic field intensity could be as low as 100 picotesla (pT) which is around 1 microgauss (uG), though most experiments were carried out in the nanotesla range or 1 milligauss (mG). The most important takeaway from this groundbreaking study is that the 7.8 Hz signal can help protect the heart during stress episodes, which most people should applaud since we are all under stress from time to time.

The second Schumann frequency health article investigates a possible benefit for blood pressure from exposure to the Schumann Resonance (SR) frequency. The authors also make the point (see Figure 2 in the present article) that the first SR modes happen to be within the frequency range of two EEG bands (i.e. alpha 8–13 Hz, and beta 14 to 30 Hz).¹⁶ Their conclusions are mixed but the depth of information contained in the article is wonderful and well worth the read. Another quote from the article should suffice to interest the reader to download it:

Cases for linking changes in the ambient magnetic field to observable changes in higher life form can be found in the scientific literature... Because the magnetoreception of neural structures should be evolutionarily adjusted to these [ambient] magnetic fields, humans may also have a special sensitivity to geomagnetic fields. In fact, scientific literature suggests that ambient electromagnetic fluctuations, such as geomagnetic activity, may affect our physiology, psychology, and behavior.

When people order the new *EM Pulser Model 78* from our nonprofit, charitable research institute, we will

donate \$25 to TeslaTech LLC for their ongoing public service work, if the customer mentions “TeslaTech” in the Comment Field online or over the phone. IRI also provides, with each EM Pulser order, a free copy of the DVD lecture “Speaking of Your Injury” by Dr. Gordon answering a lot of questions by the audience and those previously submitted to him.

We hope this work of Glen Gordon, MD will provide many people in the future with improved health and recovery from pain, as it did for his own patients. TV

References

- 1 Schumann, W. O., “On the Radiation Free Selfoscillations of the System Earth-Air-Ionosphere”, Z. Naturforsch, 72, 250-252, 1952
- 2 Corum, James et al., “The Transient Propagation of ELF Pulses in the Earth-Ionosphere Cavity”, Proceedings of the Second International Tesla Society Conference, U. of Colorado, Colorado Springs, CO July, 1986. Also see Margaret Cheney et al., Tesla: Master of Lightning, MetroBooks, 2001, p. 89
- 3 Galejs, J., Terrestrial *Propagation of Long Electromagnetic Waves*, Pergamon Press, New York, 1972
- 4 Valone, Thomas, “Electromagnetic Fields and Life Processes”, Mechanical Failures Prevention Group, National Bureau of Standards, Gaithersburg MD, September 15, 1987. Reprint available from www.IntegrityResearchInstitute.org
- 5 Becker, Robert, *The Body Electric*, William Morrow & Co., New York, 1985
- 6 Byrd, Eldon, U.S. Psychotronics Association Annual Convention, U. of Portland, Portland, OR, July 1984, www.psychotronics.org
- 7 Kaune, W. T., “Coupling of Living Organisms to ELF Electric and Magnetic Fields”, Biological and Human Health Effects of Extremely Low Frequency Electromagnetic Fields, American Institute of Biological Sciences, Arlington VA, 1985 (NTIS #AD-A152 731)
- 8 Tenforde, T. S., “Biological Effects of ELF Magnetic Fields”, Biological and Human Health Effects of Extremely Low Frequency Electromagnetic Fields, American Institute of Biological Sciences, Arlington VA, 1985 (NTIS #AD-A152 731)
- 9 Freedman, Andrew, “Mapped: Where lightning strikes the most”, Axios Science, May 24, 2018
wwwaxios.com/global-map-shows-nearly-9-billion-lightning-bolts-a49d416d-3520-41d3-94e6-9f6dad466f78.html
- 10 Valone, Thomas, Bioelectromagnetic Healing: A Rationale for its Use, Integrity Research Institute publishers, 13th edition, Jan. 2020, p. 49-51
- 11 Gordon, Glen, “Beating Free Radicals: The Basis for Injury, Illness, and Death”, Natural News, May 22, 2008,
naturalnews.com/023285_free_radicals_injury_antioxidant.html#ixzz1icK0MgyC
- 12 Gordon, Glen, “The Drug Crisis and the Natural Balance of Living Things”, Natural News, December, 2008,
naturalnews.com/023020.html
In this article, Dr. Gordon states: “Technology, not drugs, will allow pre-emptive prevention of cell death or injury by stimulating “chaperone” proteins, like HSP 70, that assist cell survival before they are threatened. Columbia University scientists demonstrated one 20-minute treatment decreased death rates in heart attack from 80% to 20% in white rats.”
- 13 Goodwin, Thomas, “Pulsed Electro Magnetic Field (PEMF) Four Year Study by NASA”, ston.jsc.nasa.gov/collections/TRS/_techrep/TP-2003-212054.pdf.
- NASA CONCLUDES THAT PEMF PROVIDES:
 - GREATER CELL VIABILITY
 - ACCELERATED CELL GROWTH
 - BETTER ORGANIZED CELL MORPHOLOGY
 - UPREGULATION OF GENES RELATED TO COLLAGEN PRODUCTION
 - UPREGULATION OF GENES RELATED TO CELL RESTORATION AND GROWTH•BIOELECTRIC POTENTIATION OF NERVE STIMULATION AND RESTORATION•HIGH-SPEED SQUARE WAVE INCREASED CELL GROWTH FOUR-TIMES FASTER
- 14 Malyshev, I., Immunity, Tumors, and Aging: The Role of HSP70, SpringerBriefs in Biochemistry and Molecular Biology, DOI: 10.1007/978-94-007-5943-5_2, 2013
- 15 Eihalel, G., et al., “Cardioprotection from stress conditions by weak magnetic fields in the Schumann Resonance band”, Nature Scientific Reports, (2019) 9:1645 | <https://doi.org/10.1038/s41598-018-36341-z>
www.nature.com/articles/s41598-018-36341-z.pdf
- 16 Mitsutake, G., et al., “Does Schumann resonance affect our blood pressure?”, Biomed. Pharmacother., 2005 October; 59 (Suppl 1): S10-S14. Also available directly from NIH Public Access:
www.ncbi.nlm.nih.gov/pmc/articles/PMC2656447/

Journal References Supporting the IRI EM Pulser 78 Design (7.8 Hz)

Note: Most of these great articles are open access so they can be downloaded for free

Cardioprotection from stress conditions by weak magnetic fields in the Schumann Resonance band

Nature Scientific Reports, (2019) 9:1645

"We show that applying 7.8Hz, 90nT magnetic fields (MF) causes a gradual decrease in the spontaneous calcium transients' amplitude.... However, the effect is frequency dependent; the described changes occurred only in the 7.6–8Hz range...**We show that the Schumann Resonance field induced reduction in Creatine Kinase release is associated with a stress response process and has a protective character.**"

Long-Term Study of Heart Rate Variability Responses to Changes in the Solar and Geomagnetic Environment

Nature Scientific Reports, (2018) 8:2663

"Overall, the study confirms that daily Autonomic Nervous System activity responds to changes in geomagnetic and solar activity during periods of normal undisturbed activity and it is initiated at different times after the changes in the various environmental factors and persist over varying time periods....Increase in cosmic rays, solar radio flux, and **Schumann resonance power** was all associated with increased HRV and parasympathetic activity"

Does Schumann resonance affect our blood pressure?

Biomedicine & Pharmacotherapy, Volume 59, Supplement 1, October 2005, Pages S10-S14

"Disease-Related Illnesses [were] **negatively associated** with Blood Pressure Reactivity to Schumann Resonance (BPR-SR)...suggesting a better health status for those who showed lower BP on enhanced SR days. Males showed higher BPR-SR...than females (P=0.004–0.016)."

Does exposure to extremely low frequency magnetic fields produce functional changes in human brain?

Basic Neurosciences, Genetics and Immunology, Feb. 3, 2009

"Behavioral and neurophysiological changes have been reported after exposure to extremely low frequency magnetic fields (ELF-MF) both in animals and in humans... The increase in paired-pulse facilitation...suggests that PEMFs exposure may produce an **enhancement in cortical excitatory neurotransmission**. This study suggests that PEMFs may produce functional changes in human brain."

Electromagnetic Forces and Life Processes

Technology Review, December 1972, Robert O. Becker (author of *The Body Electric*)

"The concept that electromagnetic forces might have any effect upon living organisms-other than the thermal effect due to Joule heating was for many years rejected by the organized biomedical community. But under the weight of experimental evidence this attitude is changing; indeed, the medical community is now expressing **considerable interest in the possible therapeutic effects** of direct application of small amounts of electrical energy."

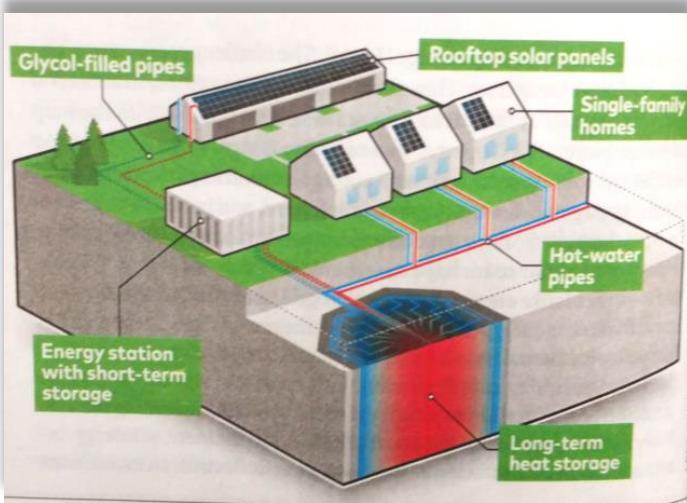
Long-lasting, dissociable improvements in working memory and long-term memory in older adults with repetitive neuromodulation

Nature Neuroscience | VOL 25 | September 2022 | 1237–1246 | www.nature.com/natureneuroscience

"The development of technologies to protect or enhance memory in older people is an enduring goal of translational medicine. Here we describe repetitive (**4-day**) transcranial alternating current stimulation (tACS) protocols for the selective, **sustainable enhancement of auditory-verbal working memory and long-term memory** in 65–88-year-old people." [NOTE: Go to IRI homepage for e-version]

AFTERWORD

As we end the *Future Energy Breakthrough Technology* section with the ongoing IRI advocacy of wireless power, optimistically looking at the future of energy, propulsion, and bioenergetics, it is a chance to sum up the findings presented in this *IRI Annual Report*. To begin with, the emphasis at IRI has always been the concern for the future well-being of humanity with an eye toward the emerging energy tech that is on the horizon, along with propulsion and bioenergetics developments that are sustainable. Here at IRI we also show the state of the art with conventional renewable energy as well as the advances in water, solar, wind, tidal, wave, nuclear, energy harvesting, and other technologies. To achieve a systems approach to the global evolutionary picture, when power disruptions are becoming more likely as the *world average temperature climbs one degree Celsius every generation*, for the foreseeable future, IRI encourages everyone to have electrical backup plans, such as Amazon selling portable 2000W power generators for about \$1000 USD.



One of the emerging concepts for electrical power these days, even for rebuilding Puerto Rico, is the use of **microgrids**. It is a design concept that groups smaller numbers of homes and businesses into a separately sustained system, often with mixed power sources. An interesting simplification for energy storage in such a microgrid is shown here from the Jan/Feb. 2018 edition of *Popular Science*. Here we see the use of solar thermal systems with fluid carrying heat to an underground thermal energy storage (UTES) which, like the simple water-pumping mechanical energy storage system ("pumped hydro") also in use today, allows an almost failure-proof source of energy as a backup for the short-term electrical battery supply bank. The plan calls for pipes to warm the earth to about 175°F which, according to Dr. Mark Jacobson, can be retained until winter time. It is well worth listening to Mark's YouTube video on his 100% renewable energy program for 139 countries, which is very encouraging. He also has several papers and lectures online dealing with the inevitable sticky question of geoengineering to cool down the world as opposed to the situation where CO₂ and global temperature reach intolerable levels.

We encourage all of our readers to study the next page of this report and contact a solar panel installer for your home from the list. You may also want one of the **Nokero** or our favorite, www.mpowerd.com solar lights and start discovering ways in which to use these *small inflatable, waterproof packs* of free energy from the sun! **MpowerD** calls them "the Luci family". The least expensive Luci (\$19) has just one bright LED like their Solar Portable Light with a flexible hook to hang anywhere, or the EMRG (for an "emergency"), which has bright white LED and clear bottom panel or flashing red LED. The **Luci Original** (\$20) is even better with a low, medium, high white light with several LEDs around in a circle and a flash mode, made to **last 24 hours** on a single charge. The **Luci PRO Series** (\$35) is the best and bigger (seen here), with a USB port to charge your phone on the go or for speedy full charging in 2 hours and lasting up to 50 hours on a single charge.

Toward our future energy independence,

Tom Valone,
President



CONSUMER SOLAR POWER

Everyone on the block recognizes the prevalence of solar panels on homes in their neighborhood. However, which companies are the best and what offers are still out there for discounts and rebates? [Consumer Affairs](#) answers this and we chose the “most popular” to list them here:

- [Vivint Solar](#) is a technology and solar energy system company whose mission is to provide clean energy throughout the United States. <https://www.consumeraffairs.com/solar-energy/vivint-solar.html>
- [Sunrun](#) - \$0 down & include free maintenance, repairs, monitoring, & insurance for 20 years. <https://www.consumeraffairs.com/solar-energy/sunrun.html>
- [SunLux Energy](#) was formed to help consumers switch to renewable energy to save money and maximize efficiency. <https://www.consumeraffairs.com/solar-energy/sunlux-energy.html>
- [Dividend Solar](#) works with a preferred network of solar installers to offer \$0-down loans to homeowners looking to go solar. <https://www.consumeraffairs.com/solar-energy/dividend-solar.html>
- [Tesla Energy](#) is a solar power supplier along with its Tesla Power Wall backup battery. You can schedule virtual or in-person consultations to determine your needs, and a rep helps you, along with the Tesla app to monitor use. <https://www.consumeraffairs.com/solar-energy/tesla-energy.html>
- [SunPower](#) is one of the oldest solar power companies in the United States in 1985. Its solar powered catamaran continually sails around the world without relying on external fuel sources. https://my.consumeraffairs.com/sunpower/?brand_id=10944

For individuals who want to reduce their carbon footprint, IRI recommends the solar-LED-battery combo units seen here.

We have purchased both www.nokero.com and www.mpowerd.com solar lights and use them in closets, kitchen, over the dryer where it is hard to read the controls, and where occasional lighting is needed, as well as in outdoor sheds. Hours of bright LED light for sun-charging about once a month!

You can also have them donated to kids in Africa easily online.

SOLAR ENERGY MODULES

The collage features three products:

- NOKERO SOLAR**: A small, compact solar lamp with a flexible LED light and a charging cable. It is labeled "Solar Illuminations lamp" and "8 hours light with solar".
- MPOWERD.COM**: A solar rechargeable light shown in use. It is labeled "8 hours light" and "Solar recharge".
- LUCI by MPOWERD**: An inflatable solar light. It is labeled "Inflatable SOLAR LIGHT", "No Batteries Required", and "Be Prepared! WATERPROOF • BLACKOUT • LUCI EMRG • INFLATABLE • PORTABLE • DURABLE • LIGHTWEIGHT".

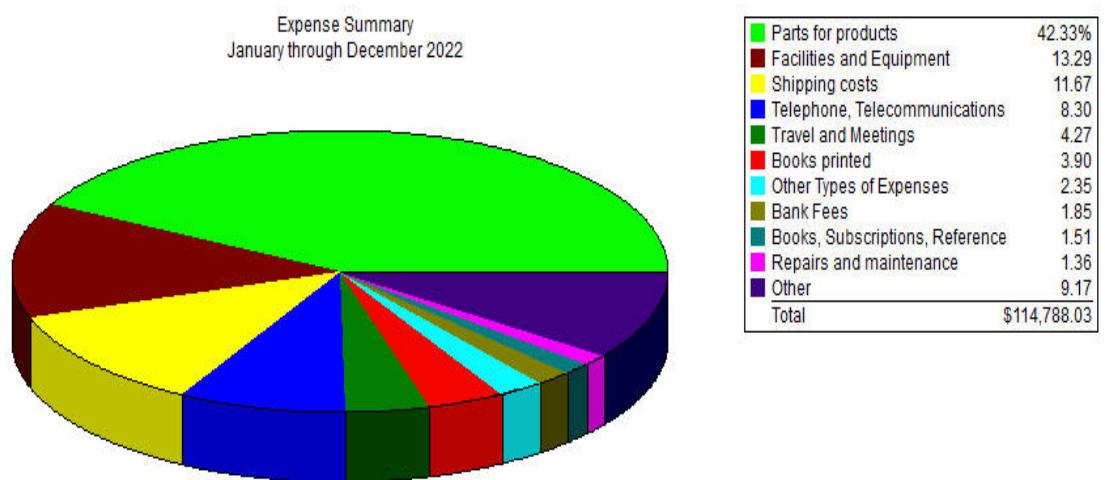
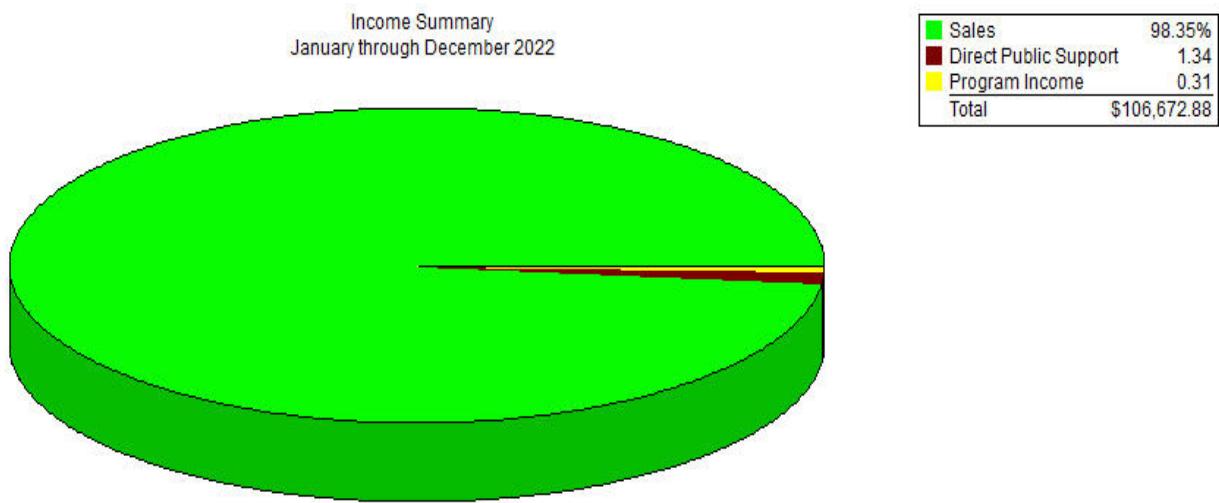
Distributed electricity that is failure-proof:

- solar lanterns
- networked solar rooftops

Thomas Valone - Integrity Research Institute

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IRI FINANCIAL REPORT 2022





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