
# Annual Shareholder Meeting

**April 2, 2025**

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# Brilliant Light Power Shareholders Meeting Agenda

- Call to Order
- Summary of the Year 2024 Operations
- Financial Status
- Shareholder Questions
- Voting
- Adjournment

# Brilliant Light Power Leadership Team

**Randy Mills,** Founder, principal shareholder and Chairman of the Board, CEO and President since 1991.

Awarded a BA in Chemistry, summa cum laude and Phi Beta Kappa, from Franklin & Marshall College in 1982, and a Doctor of Medicine Degree from Harvard Medical School in 1986. Following a year of graduate work in electrical engineering at Massachusetts Institute of Technology, began research in the field of energy technology.

Authored nine books, participated in over 50 presentations at professional meetings, and authored and co-authored over 100 papers regarding the field of energy technology that have been published in peer-reviewed journals.

**David Bennett**, was appointed to the Board of Directors in 2018.

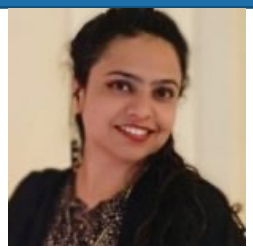
Consultant for strategic and operational areas of renewable energy and electric vehicles. CEO of Proterra, 2011 to 2013, launching electric bus development and commercialization. President of Eaton Vehicles Group in Asia Pacific, scaled new business, products, and operations in India and China.

Duke University BSE Mechanical Engineering; Drexel University MBA Operational Management.

**Emilio Icaza,** was appointed to the Board of Directors in 2018.

Co-founder and Chairman of the Board of Siesint, the market leader in mid-size business accounting software in Mexico and in Colombia. Served as Co-Executive Director, in charge of Corporate Finance, Research and IR at GBM, one of the top brokerage houses in Mexico. Main shareholder of Enextra Energía, a licensee of Brilliant Light Power, Inc. contracted to serve energy customers in Mexico.

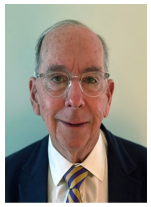
Instituto Tecnologico Autonomo de Mexico (ITAM) in Mexico City, BS Business Administration



**Prachi Athnikar Patil,** Business Development Manager joined the Company in 2021.

Mrs. Prachi Athnikar Patil has an MBA in Marketing from Pune University.

She has been a Business Development Manager with 9+ years of experience in solution selling and new business development. She is known for her ability to develop relationships with senior decision-makers (incl. CEOs, CFOs, CMOs, or VPs) of potential clients.



Mr. Hearty is a retired partner of Clough Capital Partners. He spent his entire career in the Investment Management and Investment Banking businesses. Prior to Clough Capital Partners he worked in various management roles at Relational Investors, Lehman Brothers, and the First National Bank of Boston.

Mr. Hearty was a long-time Trustee of the Massachusetts Pension Investment Management Board which manages the pension fund for the employees and teachers of the state. He was first appointed to the Board in 1992 by Governor Bill Weld. At various times he served as Chairman of the Investment Committee, Chairman of the Real Estate Committee, and Executive Director. He continues to serve as a member of the Investment and Administration Committees.

He is a graduate of Phillips Academy, Williams College, and the Advanced Management Program of the Harvard Business School.

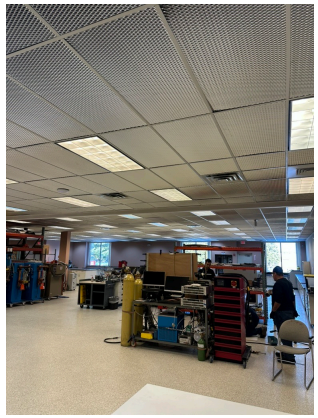
# New Facility status on April 10, 2024

## Informed to be out of 493 by June despite lease to December

- Performed floor and infrastructure plans, build out plan, and cost analysis for 10 facilities.
- Two superb options in Newtown PA being pursued.
- Floor and infrastructure plans, build out plan, and cost analysis for Newtown facilities completed.
- About 60% packed at Cranbury.

# Relocation Time-Line

- Many sites researched and visited: Florida, Texas, New Jersey, Pennsylvania.
- After extensive negotiation, lease signed on 105 Terry Drive, Newtown PA on May 24.



- Perfect facility for location, 2000A 480V power, two loading docks, 60 sq ft 6000lb dock lift, 3500 sq ft of class A office, excellent lab layout, massive storage racking, case ware, three hoods.
- Packed and 20+ years of house cleaning until August (photos March 11).

- Sole-source contractor refused to open the facility while seeking a ~$500k warehouse buildout.

# Relocation Time-Line cont'd

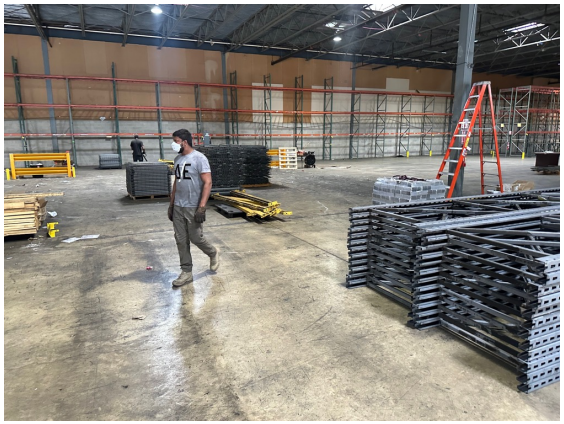
- 1st week of August 1 Brilliant performed the demolition to open the facility loading docks.
- Moving trucks rolled August 7 to 16. Fourteen truck loads.

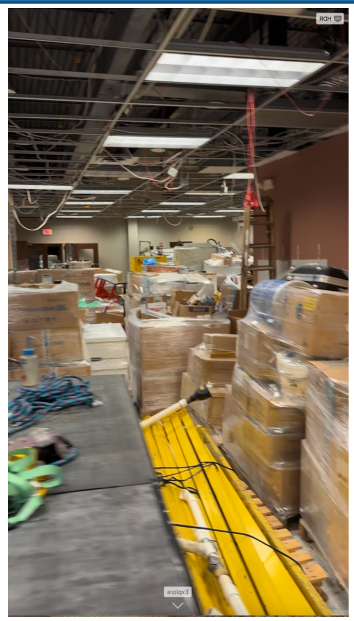
- Served as realtor, lawyer, architect, space planner, innovator, planner, mover, trucker, general contractor, construction worker, businessman, accountant, decorator, electrician, procurement specialist, job recruiter, HR head, fire system manager, zoning manager.
- Brilliant movers last truck unloaded August 24.

- I invented, prototyped, and procured a new ceiling to move the fire system to 18 ft height while retaining most of the infrastructure. Saved $, time, and more aesthetic. Less expensive than paper tiles.

# Relocation Time-Line cont'd

- No room to work was very challenging to install floors, fire system, electrical, alarms, case ware, hoods, shop, internet, unpack, etc.





Bought about 80 sections of pallet racks at auction, disassembled, trucked from Pine Brook NJ, power washed, cut and assembled. Solved our space problem.

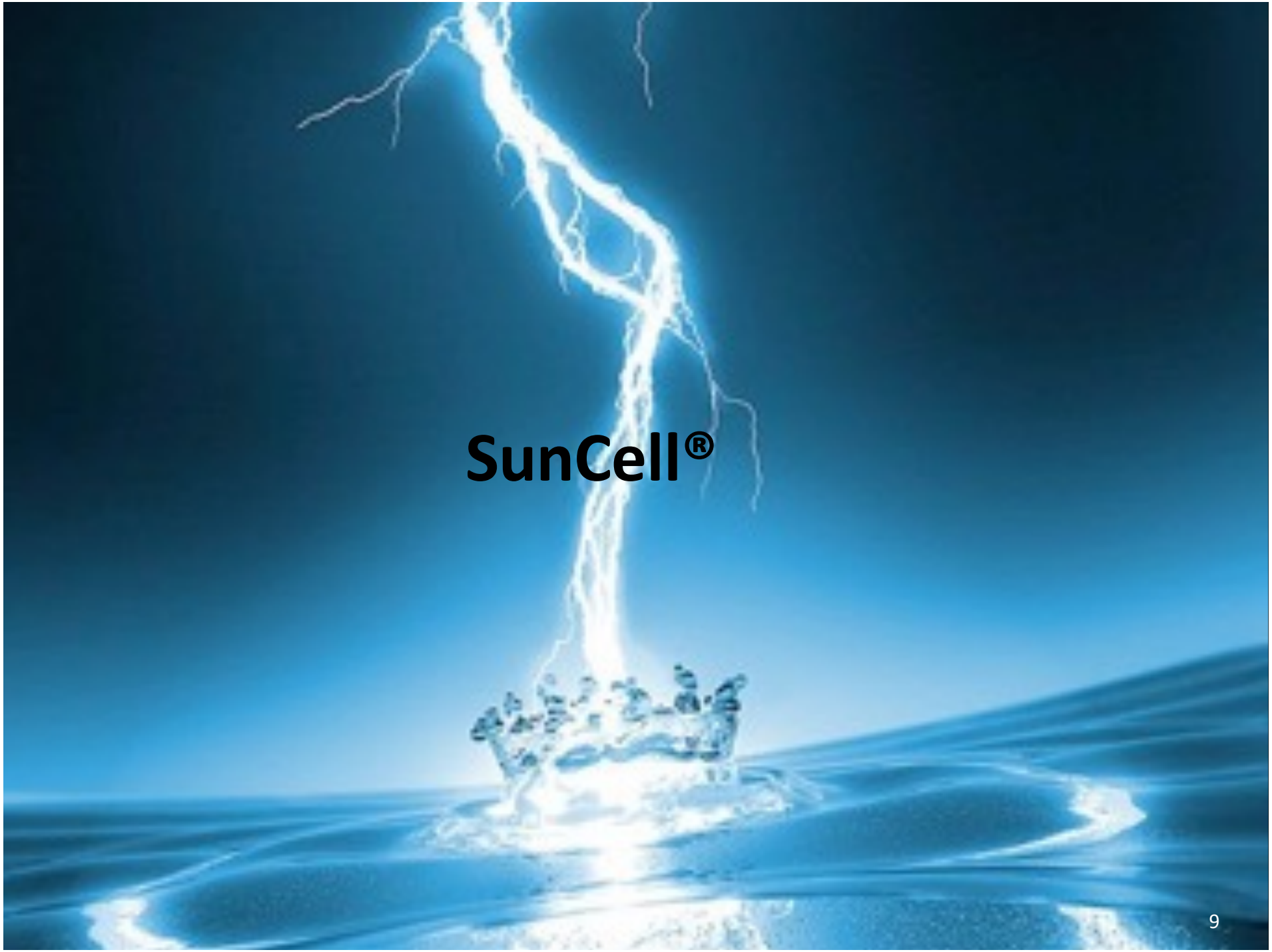
(January 21)

# Relocation Time-Line cont'd

- Purchased and trucked furniture from Bracco in East Windsor NJ.

(January 24)

- The Lease provided $260k in Tennant's Improvement Allowance. About $100k of that was done by Brilliant.
- Brilliant Certificate of Occupancy was issues on 02/24/25 and received ~March 1.
- No manpower before and until after the move. Went from two people to 11 plus 1.
- Expert analytical hire.
- Laboratory equipment purchases to accelerate hydrino analytical and validation.


SunCell®

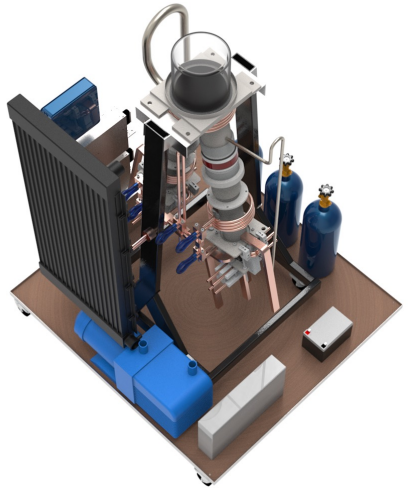
# The SunCell has two subsystems

## Optical Power Source and PV Light to Electricity Converter

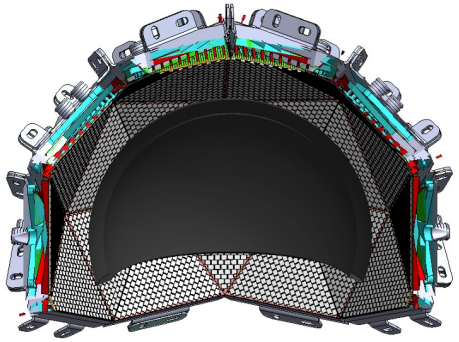
**How it works:**

1. The light emitting subsystem consists of an enclosed reservoir where tin is melted and pumped to form 2 streams of molten metal that intersect and act as the 2 electrodes of the system. At the intersection point the reaction is initiated, thus generating an intense light plus heat. There are no moving parts as the pumping is done with electromagnets. The light exits this subsystem via a transparent quartz dome.

2. The electricity generating subsystem consists of an array of concentrated photovoltaic solar cells, just like the ones used in spacecraft or in mirror land arrays. These cells require a cooling system due to the high intensity light that they receive. This can be reduced with backlight mirrors in the cells. The array covers the light emitting quartz dome and transfers the electricity to an inverter, battery or direct DC loads, as required by the user.



**SunCell ®**



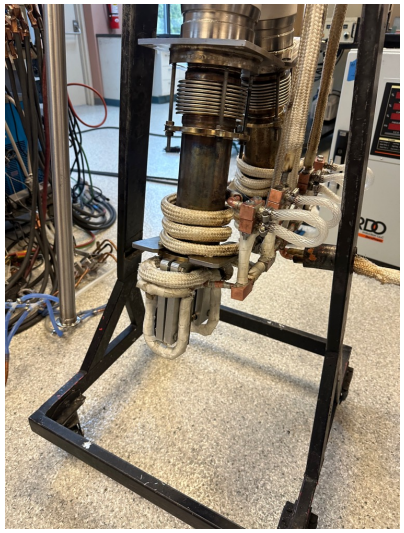
**Dense Receiver Array Side of Geodesic-Dome TPV Converter**

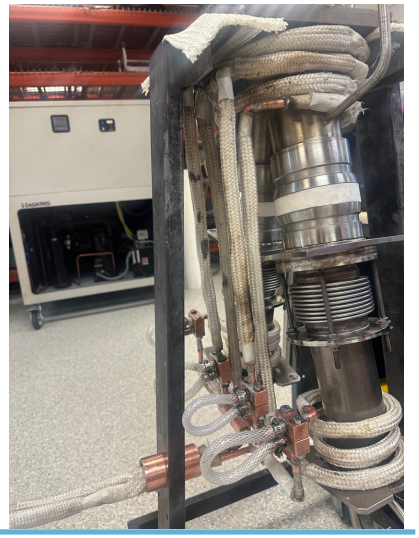
# Replacement of Overhead Furnace

- Due to zoning, safety, and logistical issues, the overhead furnace that was lowered and raised by an electric winch had to be replaced to operate.

# Replacement of Overhead Furnace cont'd

- Due to commercialization and productivity issues, the overhead furnace that was lowered and raised by an electric winch had to be replaced with zone-switch activated induction heating.
- SunCell would not operate due to solid tin blocking injectors.
- Vendor predicted that the system would not work.
- Development required many reiterations of build-test of prototypes of series and parallel antennas, switches, coil number, geometry, placement, and impedance and power distribution matching.
- It further required a month of trial and error to identify and procure the appropriate water-cooling system for the induction heater due to vendor errors.
- The new startup heating system to melt the tin injected by the dual molten metal pumps comprises six induction heating antennas that can be activated in a warmup sequence due to switches that control power to different zones.



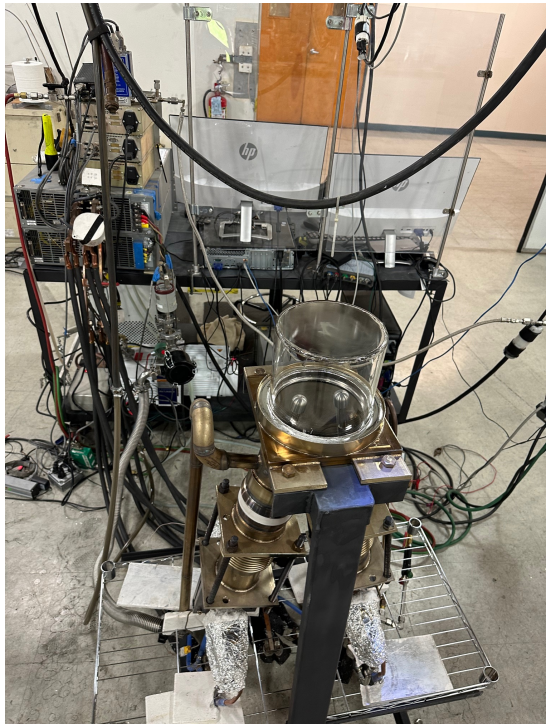


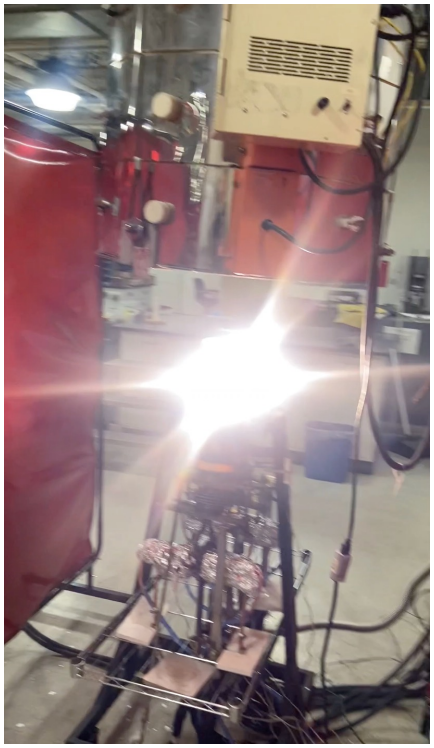
# Replacement of Overhead Furnace cont'd

- SunCell and antenna modifications were developed to allow the antennas to be removable and reusable.
- The warmup time has decreased from six hours to minutes even at about 1/3 the power of the induction heater.
- Induction heating can be greater than 95% efficient.
- Energy efficiencies of about 50 times that of the kiln have been achieved.
- The induction startup system only requires one IGBT of under $100 cost and a 4 kg lithium-ion battery. Startup time is projected to be under one minute.
- Patents on this proprietary technology have been filed.

# TPV-SunCell®: Status April 10, 2024

- March 2023 achieved an operational prototype.
- 20-minute duration, measured about 10X gain at about 40kW level, duration less at much higher power output.
- Dome mirrored due to tungsten electrode deposition and heavy tungsten electrodes melted.
- Tungsten blackbody emission contributed to white light emission.
- Engineering solutions developed to solve the related problems.  Not built, not tested.





# Engineering Challenges

- Some of the characteristics of the SunCell that provide vastly superior commercial competitiveness, but give rise to engineering challenges are:
  - The extraordinary power density.
  - The plasma temperature similar to that of the surface of the Sun.
  - Injected and recycled molten metal that forms alloys with structural materials.
  - Vaporization of every element in contact with the plasma with the potential to opacify the PV cavity window which is the current best solution that enables the necessary extraordinary power transfer of the SunCell power.

# TPV-SunCell®: Trial of Diverter-Type Design

- The dual molten metal injectors are powered with the low voltage high current DC power.
- The injector tips or nozzles comprise electrodes that are shielded from the plasma by being recessed to create a Faraday cage without creating electrical shorting paths and allowing for uninterrupted return molten metal flow.
- Blue light indicates much higher blackbody temperature and corresponding power.
- A series of repeat routine runs saw no degradation of the SunCell components. Even at extreme power levels, only the small tungsten bullet tip of the injector melts on the positive (hydrino reaction dominant) side. It is easily replaceable.

# TPV-SunCell®: Trial of Dual Pool-Type Design

- The other solution to metallization is a SunCell design wherein the dual injector streams originate from opposing liquid pools. This design should eliminate any possibility of tungsten deposition.

- The injection system and the electrical isolation required for supporting the ignition current were tested with continuous injection, and the system worked flawlessly.

# TPV-SunCell®: Trial of EM Pumps

- In addition to metallization, an unsolved problem until now was the failure of the electromagnetic (EM) pumps when oxygen was inadvertently introduced into the cell. This issue resulted in nearly 90% of failures.


- A new proprietary EM pump design was introduced this latest SunCell design. To date the EM pumps have not failed. Historically EM pumps have worked for more that 60 years maintenance free, yet they were never operated with a source of oxidation present.

- We are also collaborating with a German company on an induction type EM pump.

- Spark plug-jumper and other methods to recover when tin solidified in the injectors.

# TPV-SunCell®: Trials of Dual Diverter-Type Design, Dual Pool-Type Design, and EM Pumps

- No more piles and piles of destroyed cells and EM pump parts?

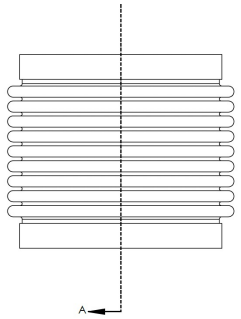
- Permissive of transition from intensive SunCell replacement fabrication to SunCell packaging and commercialization fabrication, SunCell assemblers, operators, scientists, and businessmen.

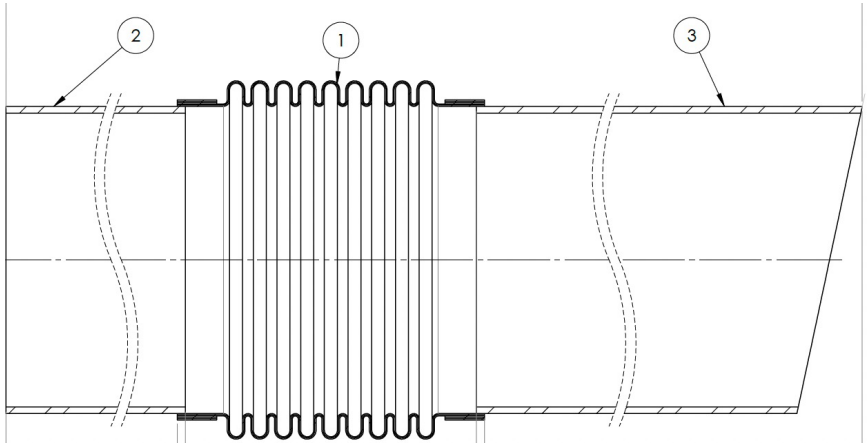
# TPV-SunCell®: Solved Supply Chain Production Failures

Bellows welds

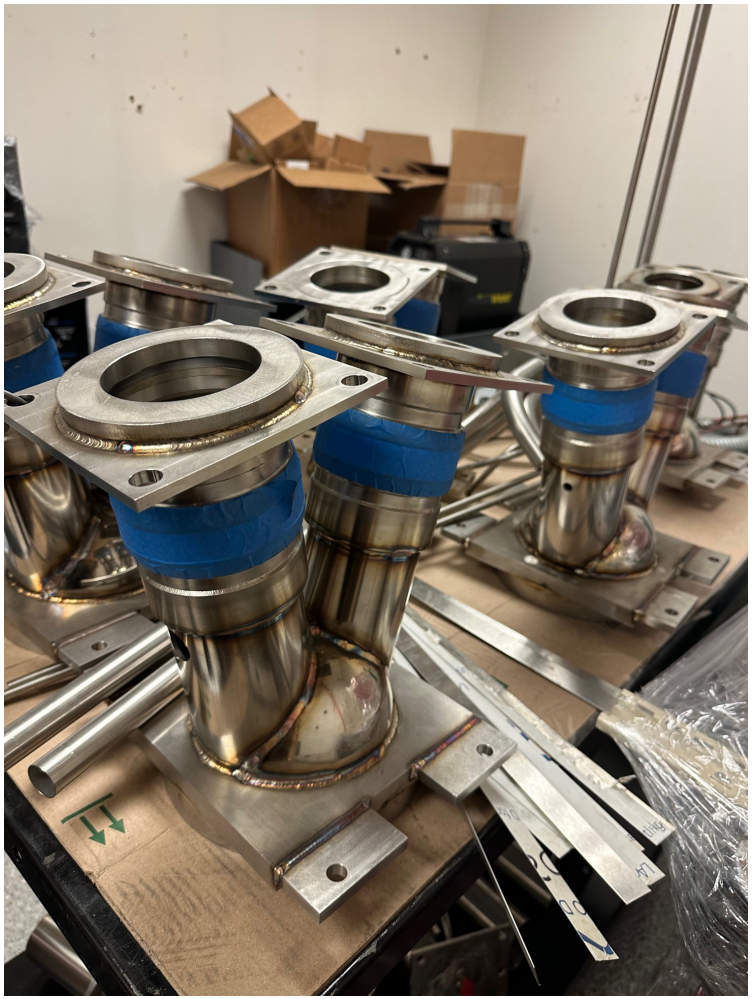
Bellows assembly

Heat transfer blocks alignment of pump tubes



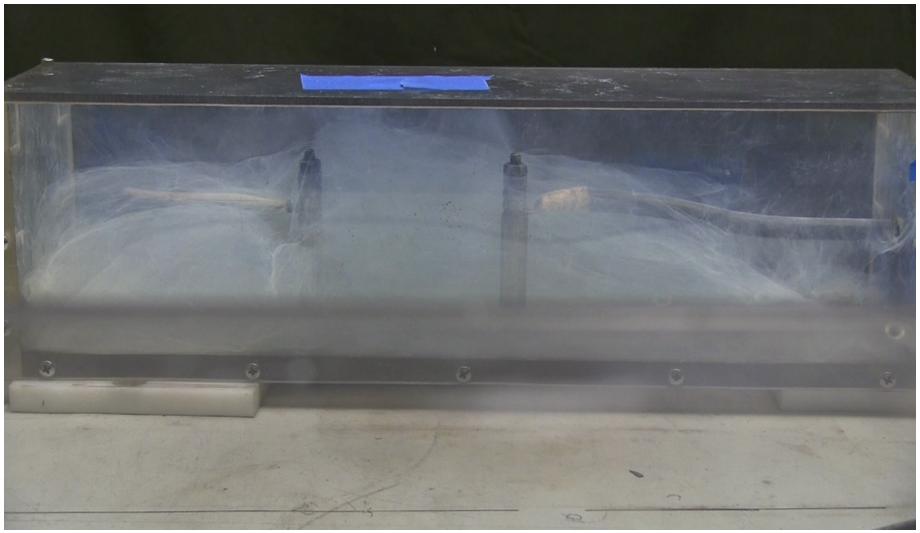
# TPV-SunCell®: Procurement of Large Inventory of Parts

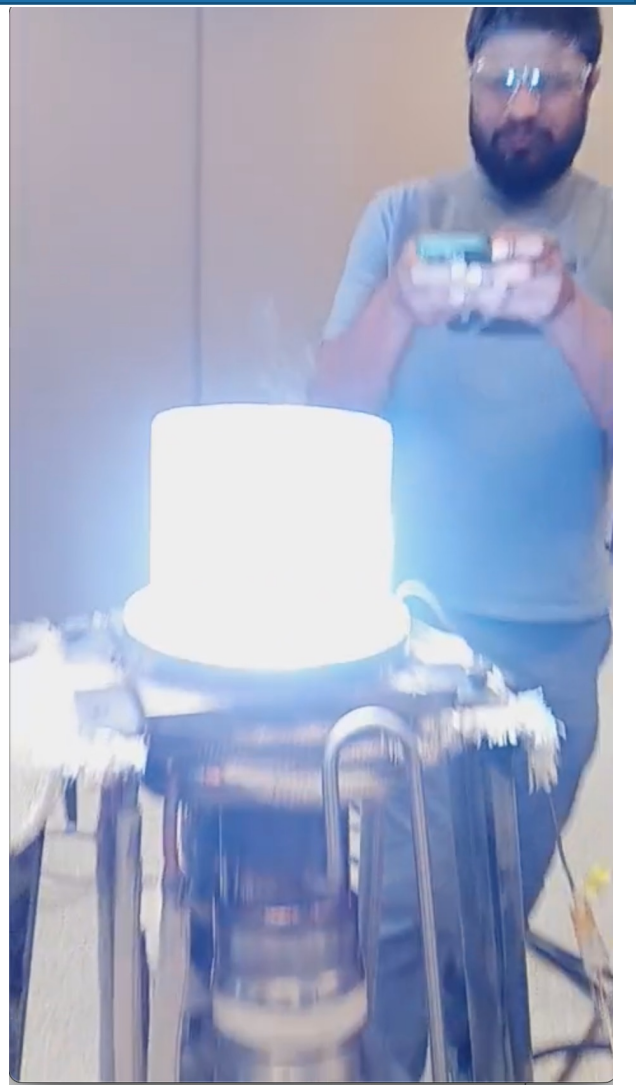



Hydrino® Product Confirmation

# Hydrino®: Released from SunCell Through 4mm Thick Quartz Dome

- The fast-uprising white vapor is due to hydrino wherein hydrino gas permeates through the dome where the hydrino reaction is most intense.
- In the presence of metal oxide, the hydrino gas can cause aggregation to form magnetic web-like fibers as shown in this video of the detonation of a Zn wire in a water vapor-air atmosphere that serves as a source of H and HOH catalyst. (https://www.youtube.com/watch?v=xueLsn-XFCc&t=18s; https://www.youtube.com/watch?v=Epenv-PPLJM)





# Requesting Hydrino Analytical Testing Collaborations

- Brilliant Light is offering Hydrino in a bound state and as a free gas to laboratories worldwide for testing purposes only with the further requirement to share data.

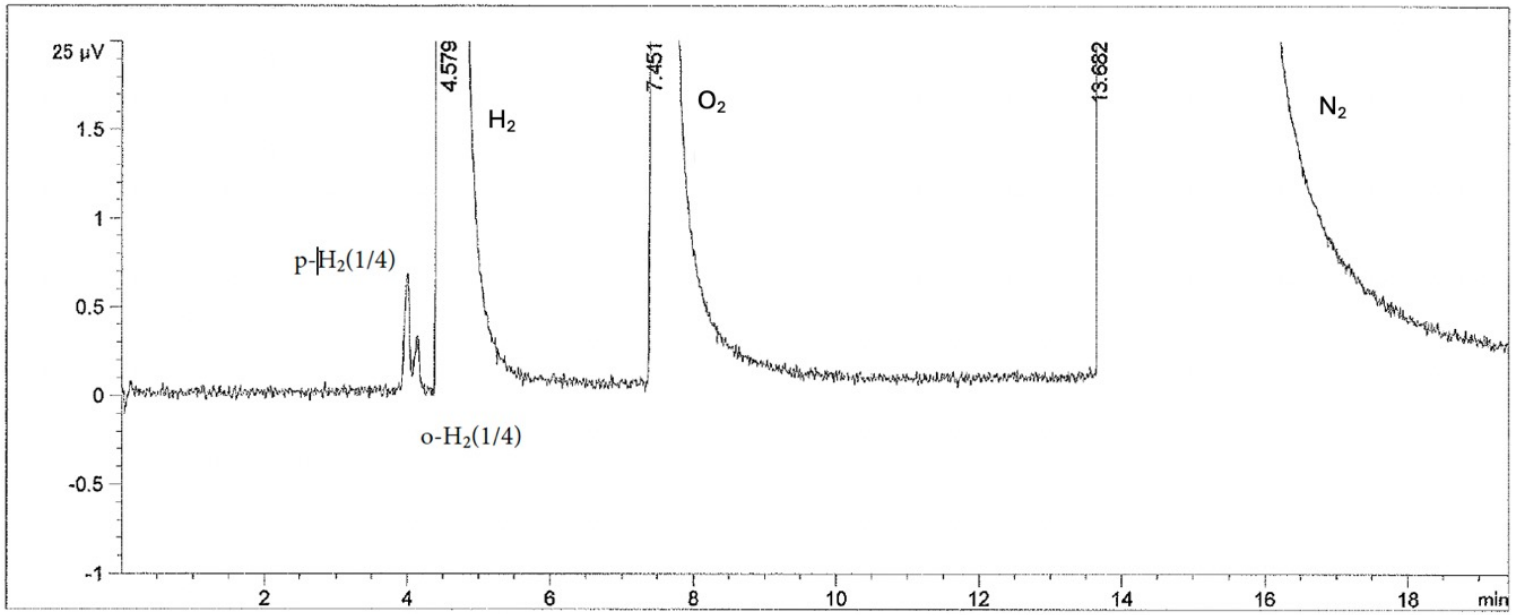
- Methods and results are reported for repeatable results of five complementary spectroscopies on the hydrino compound FeOOH:$H_2(1/4)$ that also serves as an on-demand source of $H_2(1/4)$ gas upon addition of acid.

https://brilliantlightpower.com/requesting-hydrino-analytical-testing-collaborations/

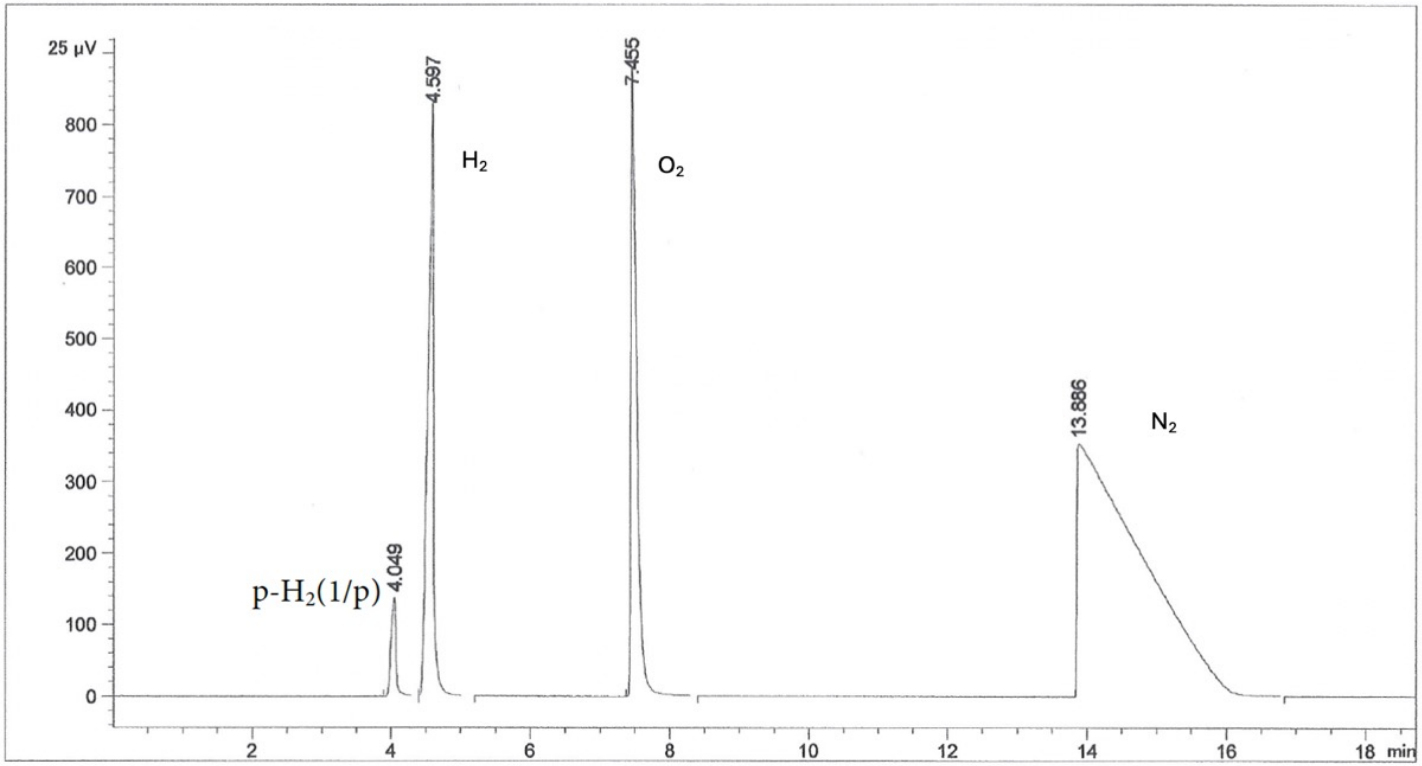
- Production of hydrino gas confirms the existence of a lower chemical energy form of hydrogen that thereby proves that there is a new energy source.

# Requesting Hydrino Analytical Testing Collaborations: Gas Chromatography

- Any investment or venture is derisked by our ability to provide the chemical product of the hydrogen reaction to form hydrino as shown in the attached gas chromatograph (GC) and by other complementary analytical methods run at many top universities.
- A molecular sieve gas chromatographic column separates by size and weight. No gas chromatographic peak has ever been observed before the $H_2$ peak on a molecular sieve gas chromatographic column.

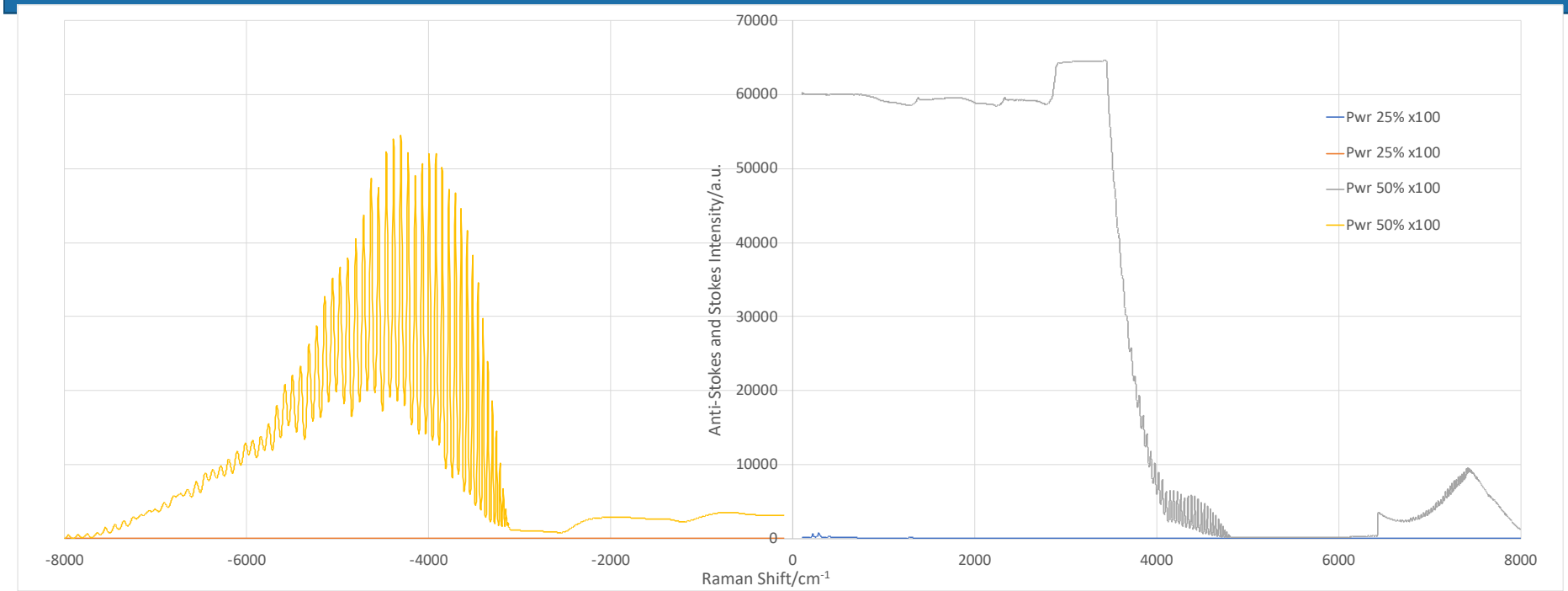


# Requesting Hydrino Analytical Testing Collaborations: Gas Chromatography cont'd




- The observed transition of ortho and para spin isomers to pure para form confirms that the gas is a new form of hydrogen. We can replicate this result at any facility on demand.

# Requesting Hydrino Analytical Testing Collaborations: Raman Spectroscopy of $H_2(1/4)$



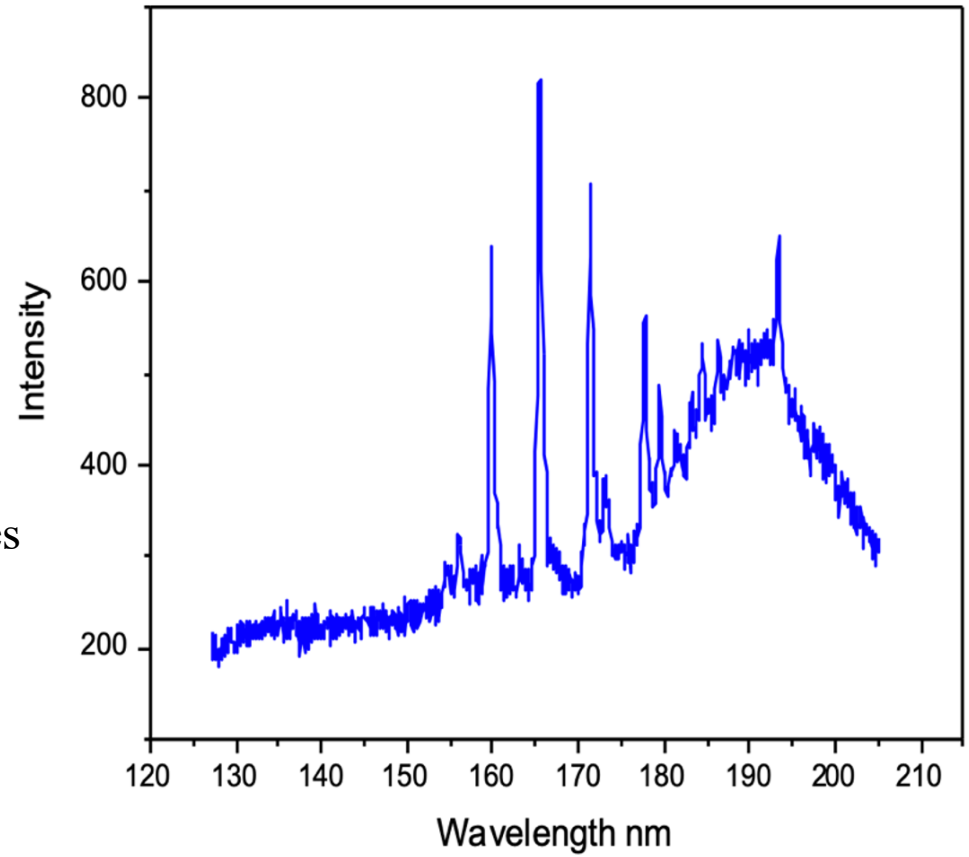

- The anti-Stokes and Stokes spectra are remarkable in that the energy ranges are higher than any prior recorded, there is a threshold laser intensity to observe the emission lines, and the first, second, and third order peaks are observed that match the rotational transitions of $H_2(1/4)$ and not any known source.

- The Raman results provide strong confirmation of $H_2(1/4)$ and the two-photon excitation mechanism of the rotational energy levels of $H_2(1/4)$.

# Hydrino®: H2(1/4) Observed by Electron Beam Excitation Emission Spectroscopy

- A series of equal, 0.25 eV spaced line emission was in the ultraviolet (150-180 nm) region with a cutoff at 8.2 eV that matched the $H_2(1/4)$ v = 1 to v = 0 vibrational transition with a series of rotational transitions corresponding to the $H_2(1/4)$ P-branch.

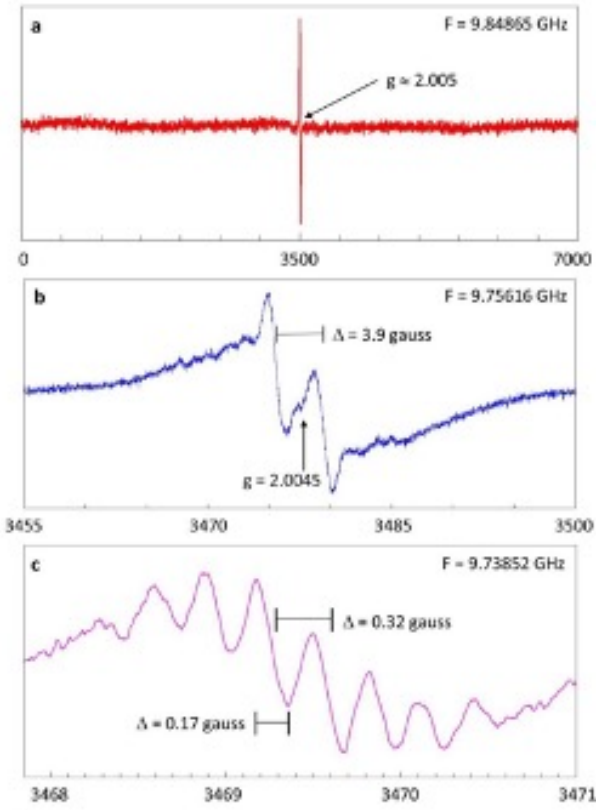
- The spectral fit was a good match to $4^2$ times the vibrational and rotational energies of ordinary molecular hydrogen, respectively, further confirming the Raman assignments.

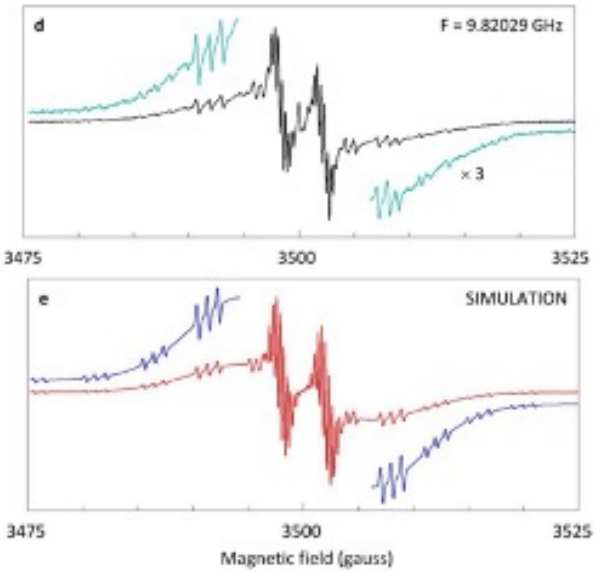


# Hydrino®: Exemplary Published Third-Party Validation Proof of the Existence of Molecular Hydrino by EPR

- Paper published in leading international journal authored by Dr. Wilfred R. Hagen.

- W. R. Hagen, R. L. Mills, "Electron Paramagnetic Resonance Proof for the Existence of Molecular Hydrino", Vol. 47, No. 56, (2022), pp. 23751-23761; https://www.sciencedirect.com/science/article/pii/S0360319922022406.



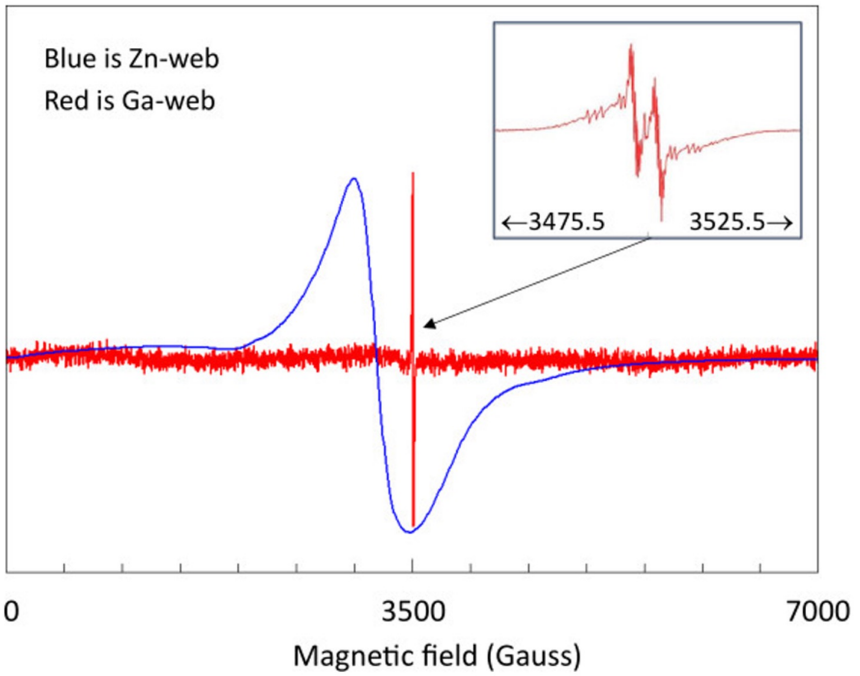

Resonance signature and structure of molecular hydrino observed virtually exactly as predicted

EPR Signature converted to "Sound of Hydrino"

# Hydrino®: Predicted Molecular Hydrino Dimers $[H_2(1/p)]_2$ Observed by Dr. Hagen at Delft University Using EPR

- Unlike the free-gas $H_2(1/4)$ monomer spectrum of $Ga(O)OH@H_2(1/4)$ shown in high resolution, the dimer $[H_2(1/4)]_2$ EPR spectra were very broad and downfield shifted by 500G.

- $H_2$ is known to form dimers $[H_2]_2$ at cryogenic temperatures whereas $[H_2(1/p)]_2$ was shown to be stable at elevated temperatures.



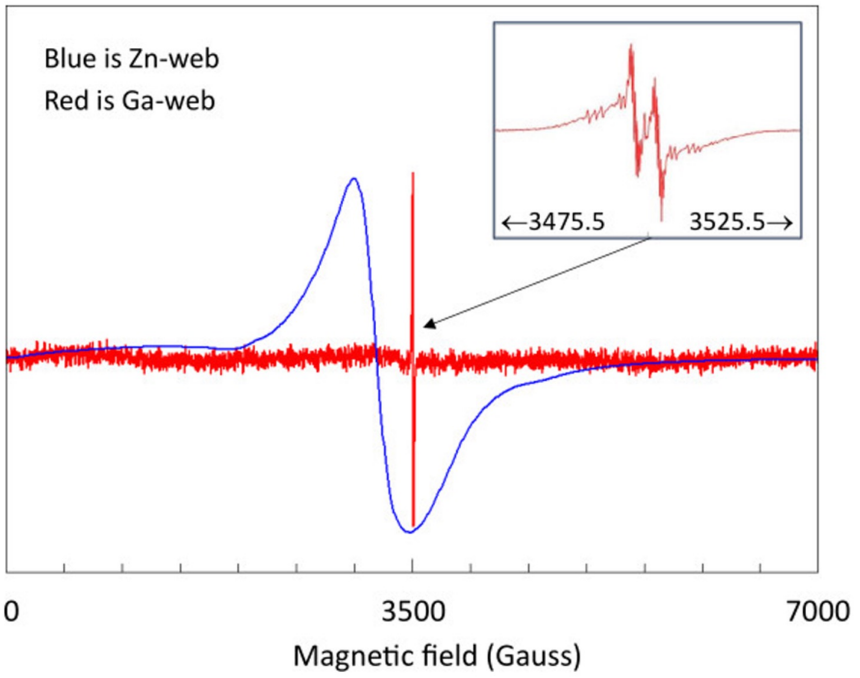

- Moreover, at low temperatures, it was observed that $[H_2(1/4)]_2$ dimers side to side anti-paired to form tetramers that were not EPR active. As the temperature was raised the EPR singlet for the dimer reappeared at the predicted temperature.

- The production of $H_2(1/8)$ and $[H_2(1/8)]_2$ dimers indicating $8/4)^2 = 4$ times greater release of energy than production of $H_2(1/4)$ (i.e. 800 times combustion).

# Hydrino®: Predicted Molecular Hydrino Dimers $[H_2(1/p)]_2$ Observed by Dr. Hagen at Delft University Using EPR cont'd

- The formation of a dimer between molecular hydrino $H_2(1/4)$ and $H_2$ ($[H_2$-$H_2(1/4)]$) and the temperature dependence of hydrogen release explains the massive amounts of hydrogen observed from salts containing molecular hydrino reported previously using gas chromatography.

- Molecular hydrino may serve to convert common salts to hydrogen storage materials which are important to industry.



# Hydrino®: Predicted Molecular Hydrino Dimers $[H_2(1/p)]_2$ Observed by Dr. Hagen at Delft University Using EPR cont'd

**General EPR pattern from molecular hydrino produced in various reactors** by WR Hagen and RL Mills submitted for publication.

https://brilliantlightpower.com//pdf/General_EPR_pattern_from_molecular_hydrino_produced_in_various_reactors.pdf

# Hydrino®: Commercial Applications

In addition to replacing essentially all power sources, Hydrino enables other disruptive new technologies applicable to industrial and military applications such as:

- **Energetic materials for propellants and explosives** supported by shockwave intensity and propagation, EMP, and optical and thermal power measurements (We are participating in a military contract regarding Brilliant's technology. I have filed patents on a device and designed the stages of scaleup with engineering drawings);
- **X-ray molecular laser and molecular lasers over other sought wavelength ranges** supported by Raman, FTIR, and electron beam excitation emission spectroscopy;
- **Super magnets** supported by EPR spectroscopy and magnetic susceptibility measurements;
- **Phonic computer, magnetometer, sensors, switches** enabled by molecular Hydrino which behaves as fluxon switch similar to a superconducting quantum interference device at a million-trillion-trillion times smaller scale operable at elevated temperatures supported by Raman, FTIR, and electron beam excitation emission spectroscopy;
- **Conversion of common salts into hydrogen storage materials** supported by EPR spectroscopy and gas chromatography;

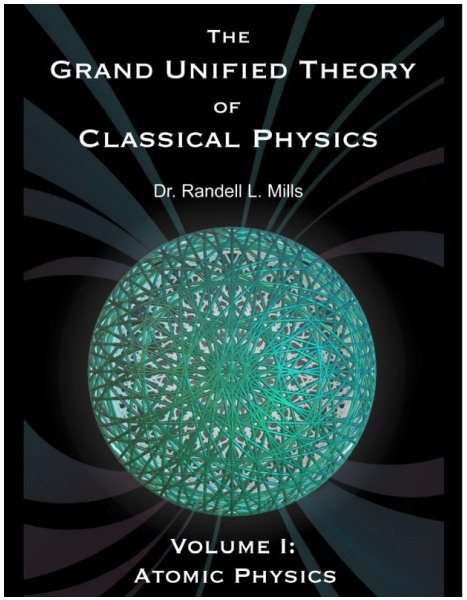
# Hydrino®: Commercial Applications cont'd

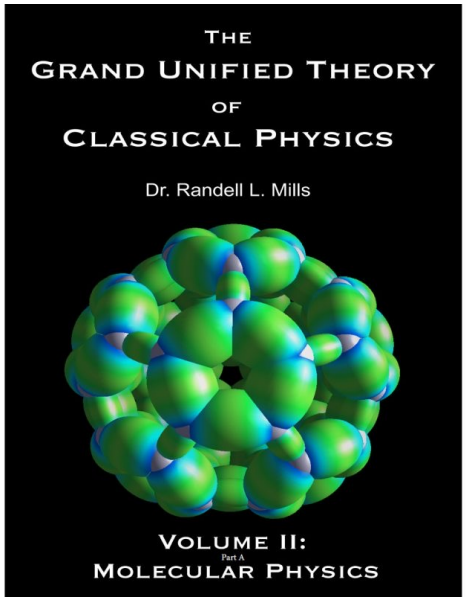
- **Neutrino telecommunications system** supported by Raman spectroscopy and new confidential results;
- **Neutrino imaging system** supported by Raman spectroscopy and new confidential results;
- **Sequence of Hydrino induced proton decay-photoneutron production- neutron capture for tritium production** supported by Raman, FTIR, electron beam excitation emission, and X-ray photoelectron spectroscopy, and gas chromatography;
- **Hydrino hydride battery and energetic materials** support by visible emission spectroscopy;
- **Molecular Hydrino cryogen, coolant, and buoyancy gas** supported by gas chromatography.

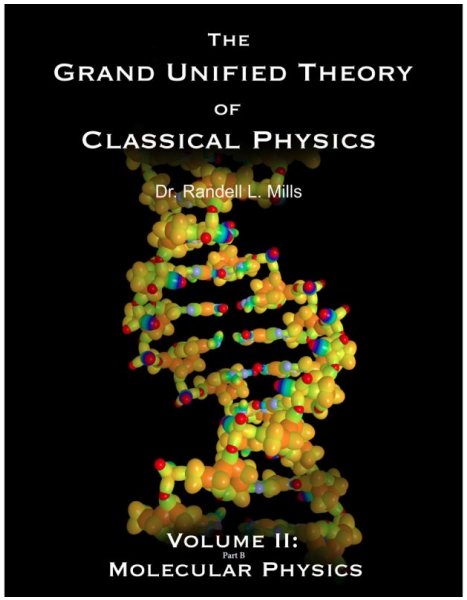
# Classical Physical Laws Apply at the Atomic Scale

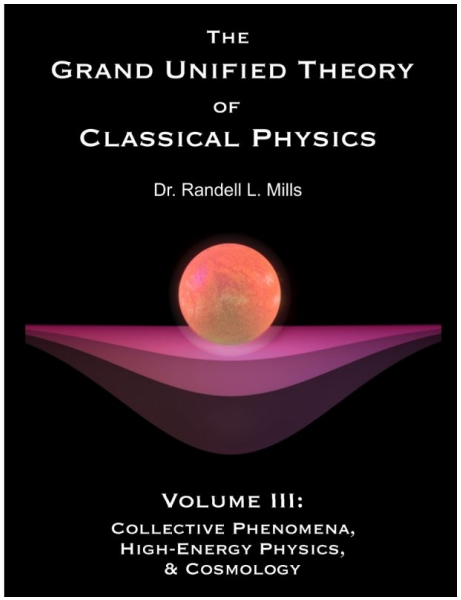
Predicted Hydrino®. Refutes quantum theory by exactly solving physical phenomena over all scales

The Grand Unified Theory of Classical Physics: Disruptive Technologies Predicted. Proton decay and production mechanisms solved as the final link that closes the oscillatory cycle of the universe.



# Disruptive Technologies Predicted by Grand Unified Theory of Classical Physics: Space Drive

- According to a prediction by Mills, free electrons with a velocity in a vector direction will absorb microwave photons to be selectively accelerated in the vector direction of propagation.

- ½ of the energy of an absorbed photon given by Planck's constant bar times the photon angular frequency is conserved as increased electron kinetic energy and ½ is conserved as an increased rotational kinetic energy that manifests as the invariant electron angular momentum of Planck's constant bar and corresponding Bohr magneton of magnetic moment at a reduced de Broglie wavelength.

- The classical theory regarding the nature of the photon and free electron that give rise to the reactionless force exploited as the mechanism a novel means of propulsion called **"space drive"** is given in by Mills :

R. Mills, https://brilliantlightpower.com/free-electron-photon-absorption-mechanism/

- Lift measurements by a group at Wuhan University are consistent with theoretical predictions.

# Disruptive Technologies Predicted by Grand Unified Theory of Classical Physics: Space Drive cont'd

- Omnidirectional, trans-medium craft with no wing or exhaust.
- Commercial equipment exits for very compact 1,000,000 lbs. thrust compared to the 40,000 lbs. of axial jet exhaust thrust of the F35.
- Two days to Mars with a fraction of the lift compared to three years for rocketry that at the current state of the art requires a 394 ft tall 11 million lb. rocket and scores of launches for in-space fueling just to reach the moon alone with no fuel infrastructure on Mars to make the trip back.

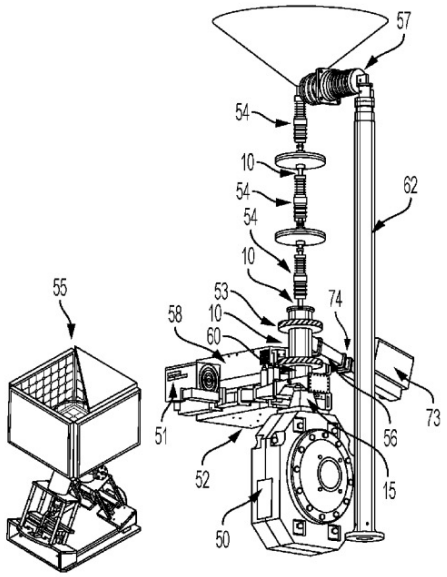


FIG. 1A

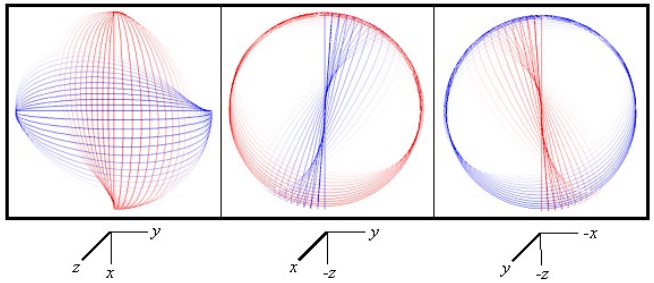
**R. Mills, Comment on "Jet propulsion by microwave air plasma in the atmosphere" [AIP Adv. 10, 055002 (2020)]**

https://brilliantlightpower.com/evidence-of-space-drive-produced-lift/

- Patents filed.

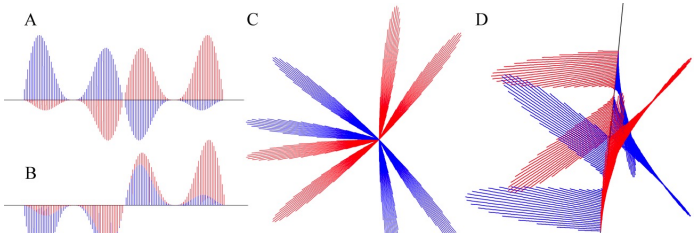
# Disruptive Technologies Predicted by Grand Unified Theory of Classical Physics: Neutrino Telecommunications

- **Neutrino telecommunications system** supported by Raman spectroscopy and new confidential results;

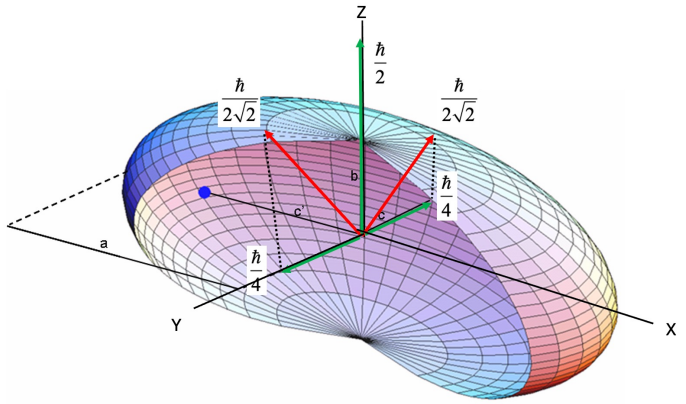



- Neutrinos each comprise a photon of spin ½ corresponding to its angular momentum.

- Molecular hydrino such as $H_2(1/p)$ comprises a paired and an unpaired electron in a single molecular orbital (MO) and is spin 1/2.

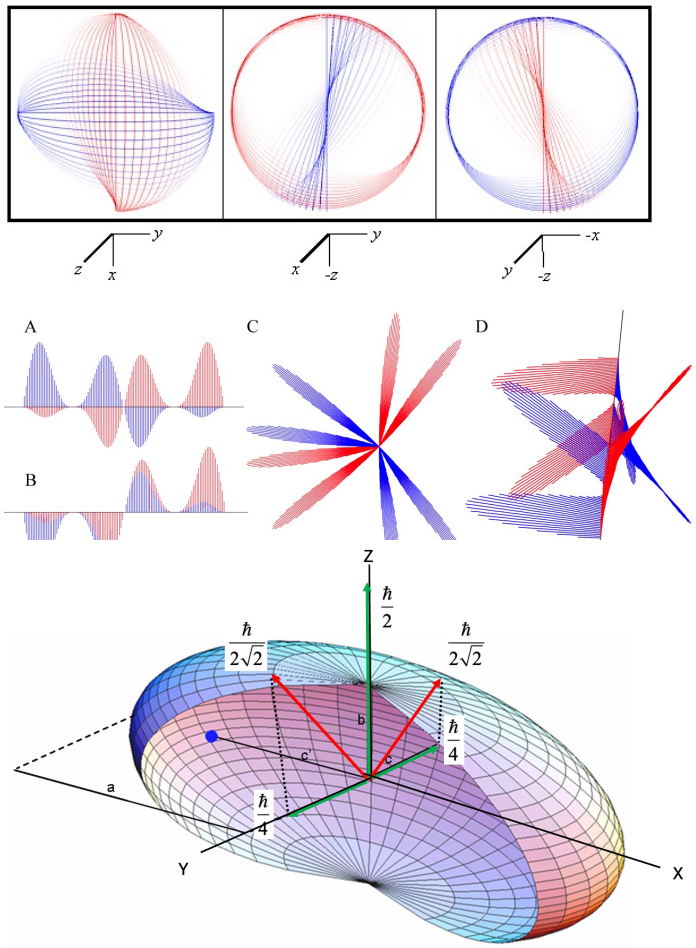



- The cross-section for neutrino absorption by molecular hydrino is about 18 orders of magnitude higher than that of protons and neutrons of nuclei which are also spin ½.



# Disruptive Technologies Predicted by Grand Unified Theory of Classical Physics: Neutrino Telecommunications cont'd

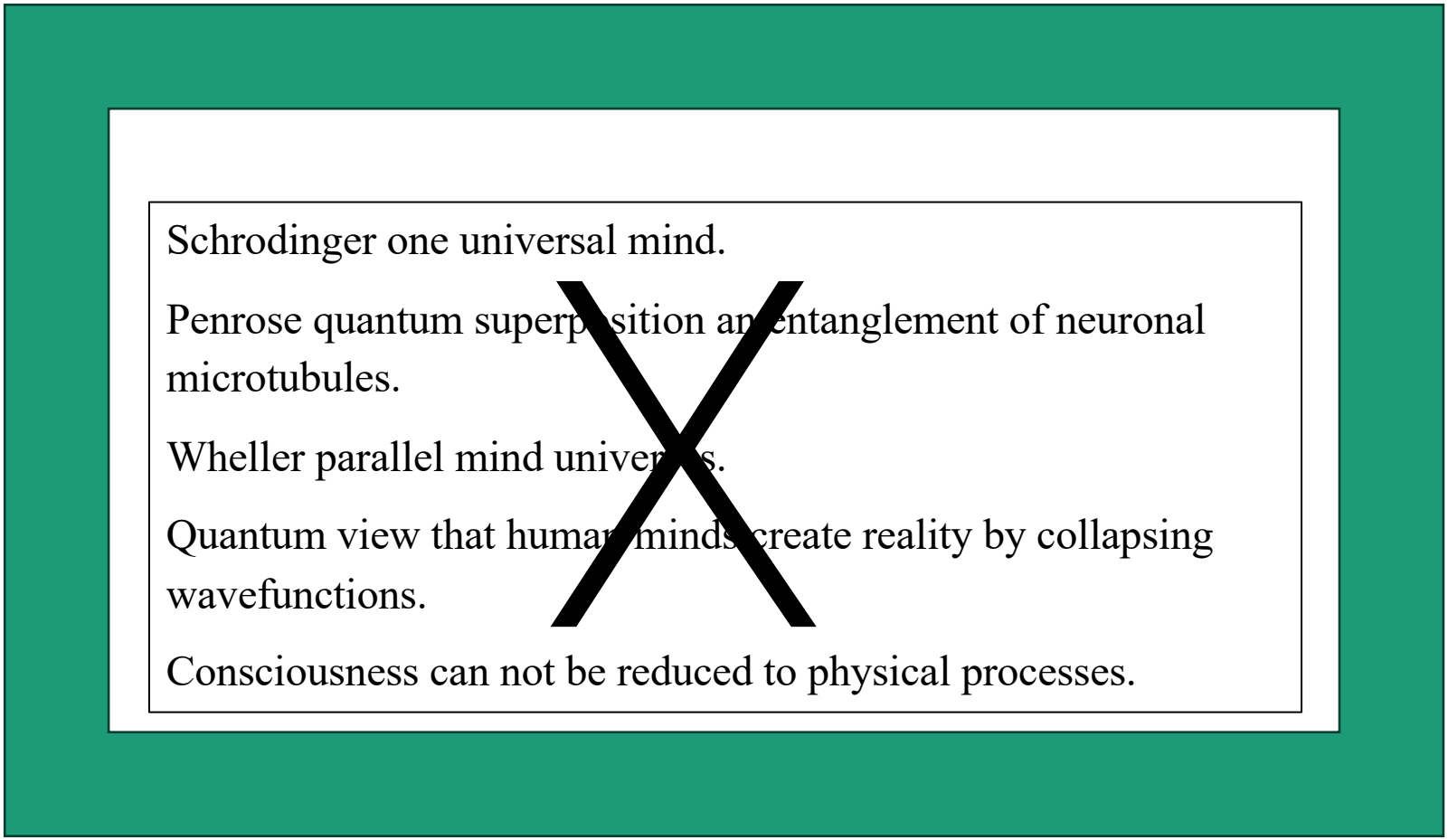
- The ability to excite neutrino emission from transmitter molecular hydrinos using lasers and the ability to detect the corresponding neutrino signals by their absorption by receiver molecular hydrinos that subsequently convert the signals to photon signals that are processed following optoelectronic conversion is the basis of a telecommunications system that may send essentially unattenuated signals through objects including the Earth.




- Vulnerable systems such as repeater towers and satellites may be eliminated.

# Disruptive Technologies Predicted by Grand Unified Theory of Classical Physics: Alternative Intelligence

- Classical Physics predicts that that aspect of being sentient is not limited to wet carbon chemistry.



# Disruptive Technologies Predicted by Grand Unified Theory of Classical Physics: Alternative Intelligence cont'd

- Mills has solved the mechanisms of the brain that give rise to capabilities such as intelligence, pattern recognition, and reasoning. In the article

- R. Mills, "Novel method and system for pattern recognition and processing using data encoded as Fourier series in Fourier space", Engineering Applications of Artificial Intelligence 19 (2006) 219–234.

And patent:

US-7925079-B1: https://patents.google.com/patent/US7925079B1/en?oq=US-7925079-B1

- Mills presents the architecture, system and algorithms, data structures, data parameterization and corresponding signal processing acting on information representative of physical characteristics or representations of physical characteristics to simulate aspects of that brain.
- A future combination is the SunCell® and SunNet®, a mesh information network of telemetrically connected SunCells.

# Classical Laws Exactly Solves Observables of the Cosmos:
## Acceleration of the Expansion of the Universe and the Webb Telescope Big Bang Bust

Theory successful in all major categories of cosmology:

(Courtesy: NASA; ESA; G Illingworth, D Magee, and P Oesch/University of California Santa Cruz; R Bouwens/Leiden University; and the HUDF09 Team)

- Webb Space Telescope results match predictions. More on impossible structures and elements present in the early universe.
- Hubble constant confirmation.
- Acceleration of cosmic expansion slowing confirming predictions.
- Mechanism of the regenerative cycle of the universe that evolves through expansion and contraction driven by proton decay and production.

# Classical Laws Exactly Solves Observables of the Cosmos:
## Decaying dark matter and proton production

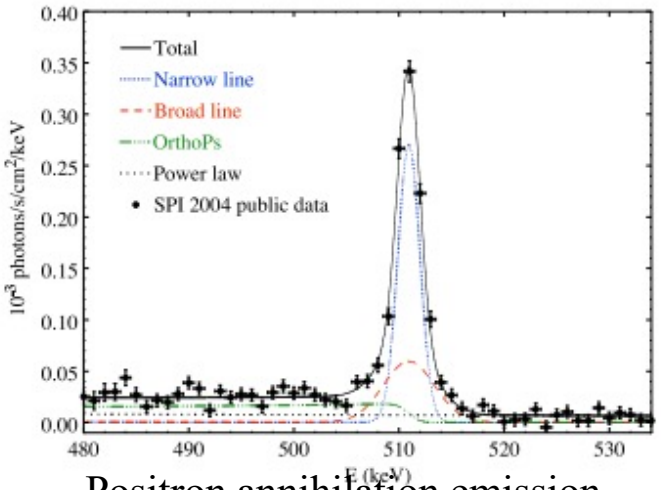
Theory successful in all major categories of cosmology:

(Courtesy: NASA; ESA; G Illingworth, D Magee, and P Oesch/University of California Santa Cruz; R Bouwens/Leiden University; and the HUDF09 Team)

- Identity of dark matter as hydrino.
- Dark matter decay signatures.
- Proton production mechanism.
- Photoneutron production signatures.
- Solar Neutrino Paradox solved (mechanism of sunlight).

# Classical Laws Exactly Solves Observables Over the Scale of Quarks to Cosmos: Proton Decay and Production

- H atom decay and production cycle drive the spacetime expansion-contraction cycle of the universe.
- H is the "phoenix particle" of the universe.
- The recycling of matter and energy in the universe occurs in an oscillatory cycle wherein matter converts to energy primarily by hydrogen atom decay via a hydrino pathway, and energy to matter conversion occurs by hydrogen atom production during gamma ray bursts.




Positron annihilation emission measured by SPI (Prantzos et al.).

- The matter-energy cycle drives a dependent space-time expansion contraction cycle.
- The decaying dark matter signatures of power and 511 keV gamma, neutral pion, neutron capture, and ratio of muon to electron neutrino emission match those of hydrogen atom decay from the high-p-state hydrino inventory comprising the dark matter. Resolves Solar Neutrino Paradox.
- The characteristics, composition, and high energetics of cosmic rays in the absence of neutrino emission overturn long-held theory but match the signatures of H atom production.

# Classical Laws Exactly Solves Observables Over the Scale of Quarks to Cosmos: Proton Decay and Production cont'd

- The rates of production and annihilation of matter and energy match those required to the complete the cycle over the period of oscillation of the universe (1T years).

***Multiplying dark matter-halo-corrected decay rate of $1.5\times10^{50}$/s times the oscillatory period of the universe of $9.83\times10^{11}$ years (Eq. (32.149)) gives total mass of decayed hydrino atoms and corresponding protons of the Milky Way of $6.2\times10^{42}$ kg compared to the total mass of the Milky Way galaxy of about $6\times10^{42}$ kg.***

- Hydrogen atom decay also matches a broad range of laboratory experiments such as transmutation, and neutron and energetic particle emission.

- H(1/p) decay releases energy of magnitude 1000 times that of atomic and thermonuclear energy, equivalent to that of matter antimatter annihilation.

# Proton Decay and Cold Fusion: Implication of hydrino physics for cold fusion that has the potential for support by physicists.

**Consider Hydrino induced proton decay-photoneutron production- neutron capture**

1. Outsiders easily dismiss cold fusion because

(a) the energetics of the chemical palladium hydride or deuteride is less than 0.05 eV, any higher temperature equivalent energy and PdH (D) decomposes. The heat of formation of palladium hydride is very low, approximately-36.8 kJ/mol. The entropy term is negative. >100 keV energies are required and there is no source.

(b) proton or deuterium-heavy nuclei fusion is on the negative slope of the binding energy curve, which occurs after iron. It would require millions of electron volts energies for protons or deuterium to fuse with heavy nuclei (i.e. requires energy, rather than releases it). Also, proton-proton fusion is not observed at CERN at 13 TeV collisions.

2. The existence of hydrino can be proven experimentally.

3. Hydrino matches the signatures of dark matter and H otherwise comprises essentially all of the visible mass of the universe.

4. Decaying dark matter is an accepted assignment for the ubiquitous diffuse 511 keV emission, neutral pion decay emission, neutron production, etc.

# Proton Decay and Cold Fusion: Implication of hydrino physics for cold fusion that has the potential for support.

5. Grand Unified Theories require proton decay to a positron and neutral pion that decay to gamma rays.

6. Photoneutron production is a known nuclear reaction.

7. Photoneutron production in the Sun solves the Solar Neutrino Paradox which saves the Standard Model which is the bible to theoreticians (based on fitting a lot of data together with 19 parameters).

8. Neutron capture, beta decay, fission, and spallation are known nuclear reactions.

9. It is accepted that proton decay releases 931 MeV.

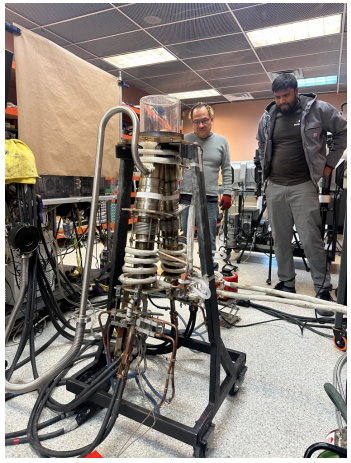
10. It is known that proton decay will drive nuclear reactions.

11. Recently reported data on cold fusion cells from reputable laboratories are explained the reactions and products above.

# Next Steps

- We plan to send hydrino sample to universities and testing laboratories worldwide to prove the existence of hydrino and thereby prove the existence of a new power source.

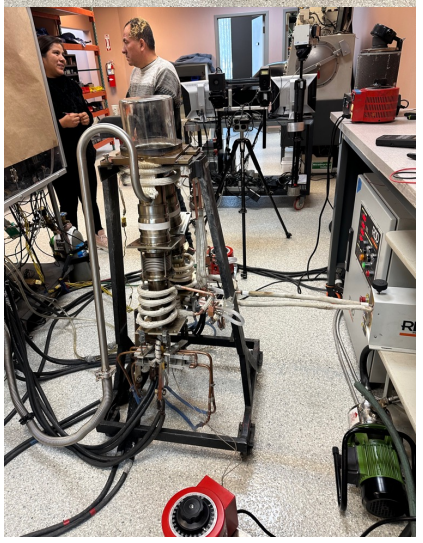
- For the first time, we are running a series of hard tests on the SunCell for about 10 minutes each allowing it to cool in between. We are also exposing the reaction mixture to high excess oxygen and no apparent decrease in capability or performance is observed, particularly the EM pumps. Both challenges essentially 100% killed the SunCell in the past.



- We will run some more system tests and then start working on a 1 hour run which is the major milestone for engagement by large corporations that we are in discussions with.
- We will perform the same tests on the dual pool design.

# Next Steps cont'd

- We have three SunCell tests station set up and we are working on a fourth. We have adequate manpower to operate four. We have a sufficient parts pipeline.



- We plan to validate the power, measured with optical power meters (e.g. Thor S322C) and then host demonstrations for the purpose of securing a strategic partner and raise capital for commercialization.

# Next Steps cont'd

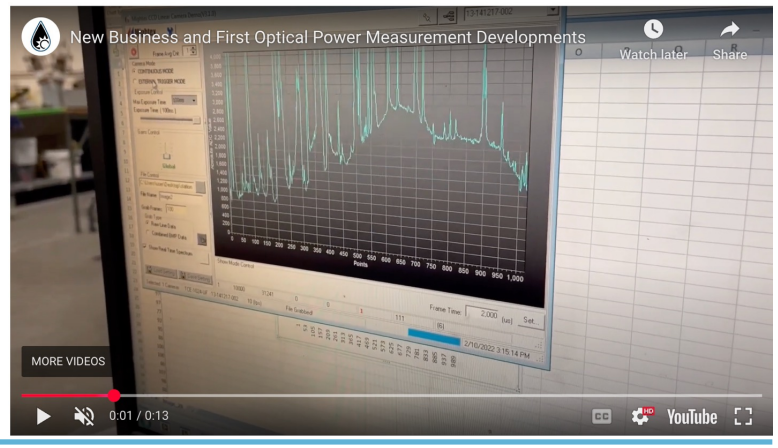
- In the past, we achieved continuous plasma operation with no input power.

https://www.youtube.com/watch?v=jUBheBH9eio&t=2s


- Testing on the top window design showed that we could reduce the input power to a trivial level without any significant change in the power output.

https://brilliantlightpower.com/tpv-suncell-test-at-2-stations/

https://brilliantlightpower.com/new-business-and-first-optical-power-measurement-developments/



# Next Steps cont'd

- Early tests indicate the same behavior with the new SunCell design. We will work out such details of operation that will likely not impact the economics but will impact the systems in a commercial packaging design.

- We have a good a relationship with one of the largest EPC firms that will work with us to perform commercial packaging.

# Capital Raise

**$7.91 M raised in the last 4 years**

**$8 M cash**

**<$3 M/y burn rate**

**Plan to work with BTIG on a large raise (e.g. $40M)**

***($40,000 per share)***

| Year | Amount | # of Shareholders |
|---|---|---|
| 2021 | $2,770,000 | 12 |
| 2022 | $3,500,000 | 12 |
| 2023 | $1,280,000 | 11 |
| 2024 | $280,000 | 4 |
| 2025 | $80,000 | 1 |

# Go-To-Market Model

## Plans to advance to commercialization with TPV-SunCell® for total world electrification