



Business Presentation April 10, 2019

# Safe Harbor Statement

This presentation contains forward-looking statements, including statements regarding the company's plans and expectations regarding the development and commercialization of our technology. All forward-looking statements are subject to risks and uncertainties that could cause actual results to differ materially from those projected. The forward-looking statements speak only as of the date of this presentation. The company expressly disclaims any obligation or undertaking to release publicly any updates or revisions to any such statements to reflect any change in the company's expectations or any change in events, conditions or circumstances on which any such statements are based.



# Overview

- Brilliant Light Power, Inc. is developing a new zero-pollution, primary energy source applicable to essentially all power applications wherein the latent energy of the hydrogen atom from water molecules serving as the fuel source is released by forming Hydrinos<sup>®</sup>, a more stable chemical form of hydrogen. The SunCell<sup>®</sup> cell was invented by Dr. Mills to release this energy as brilliant light converted to electricity at an anticipated cost of a small percentage of any competing source of electricity.

- *Brilliant Light Power's path forward is to:*
  - *Prove our power source to the world in the near term through power measurements, identification of the Hydrino<sup>®</sup> products of the reaction, and engineered power systems.*
  - Develop the technology
  - Engineer products
  - Commercialize solutions



A yellow sign with black text that reads "CHANGE AHEAD" in bold, capital letters. The sign is tilted slightly to the right. The background of the sign is a solid yellow color.

# CONVENTION DEFYING INVENTION on a PATH to WIN

Hydrino® was predicted from physical laws. Its existence as a more stable chemical form of hydrogen, a state below the ground state of quantum theory, disproves quantum theory. The SunCell® is disruptive of essentially ALL energy and power infrastructure.

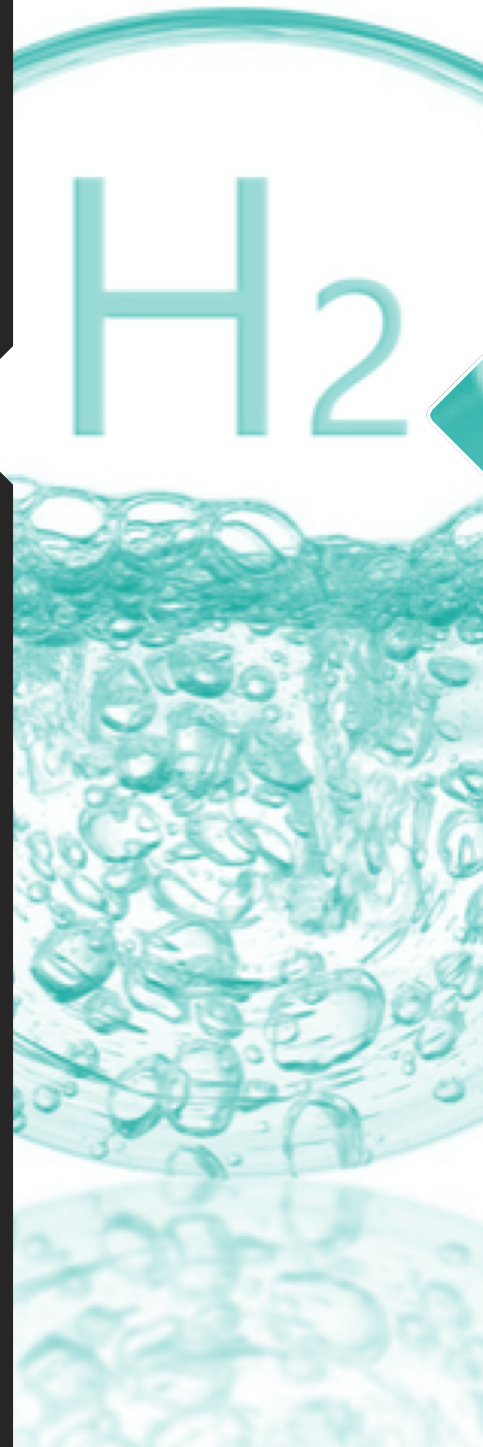
*Despite odds, the Brilliant Light Power's is on a path to success:*

- Theory Validated
- Hydrinos in a Bottle
- 10 MW-Scale Optical Power Validated
- 100 kW Thermal Power Validated
- Engineered Continuous Power Systems
- SunCell® and Hydrino Validation in Progress



# About Brilliant Light Power

- Reinventing electricity, independence of being completely off grid and independent of fuels infrastructure
- New, sustainable, nonpolluting energy
- Technology and science validated by independent third parties
- Extensive proprietary methods and systems
- Electricity company, sales via lease agreement, no metering
- Partnership & outsource business model
- Transitioning from research to reality
- Profound implications for electric power – accessible, affordable, clean



# Hydrino® energy key points

*Investment of  
\$100M+, years of  
research, success  
and invention...*

- Hydrino® power has a higher power density than any other power source known to man. Recent NIST calibrated results show 20 MW peak optical power as unique signature of a high energy continuum emission spectrum and an energy gain of 200 to 500 times.
- Product Hydrino® “in a bottle” identified by multiple analytical methods.
- The Hydrino® energy source has been validated by more than 10 different methods including the latest, gold standard, NIST calibrated light sources and commercial calorimetry.
- The Hydrino® is ubiquitous in nature, and matches astrophysicists conclusions that so-named dark matter is a different allotrope or different chemical form of hydrogen.
- There are many validation reports published on the Brilliant Light Power website from leading experts, some from unfunded assessments.
- There are more than 100 peer reviewed publications to support the Hydrino® including external scientific authors.
- Every evolutionary step has produced a higher power density leading up to the commercial development of SunCell®.



# Key Objectives



1. Develop the Hydrino® theory and technology across multiple markets:
  - thermal power generation
  - electrical power generation
  - novel compounds
  - energetic materials
  - molecular modeling
2. Engineer SunCell® generators for thermal power and electrical power generation with concentrator photovoltaic array and window system and magnetohydrodynamics (MHD) exploiting a novel thermodynamic cycle. (engineering paper written, prototyping in progress)
3. Pursue corporate partners to succeed at developing a commercial SunCell® product. Desired original equipment manufactures (OEM) identified.
4. Plan to outsource development of components of the new advanced SunCell® power source and MHD converter when beneficial.
5. Create value and create wealth with liquidity.
6. Increase public awareness to create opportunities.

# Levers to Achieve Future Valuation

- **Theory:** Techniques and unique characteristic signatures to identify Hydrino® are predicted from exact closed-form solutions of atoms and molecules. Formal validation by two physicists.
- **Hydrino® Identification:** Multiple methods demonstrated for measuring Hydrino® product. Hydrino in a bottle. Over 100 peer reviewed publications.
- **Power Releasing Hydrino® Reaction:** 20 MW in microliters, highest controlled power density known.
- **Power Engineering:**
  - Focused on an advanced design that has the capacity to generate high power with less complex systems.
  - Newly invented MHD thermodynamic cycle seems well suited for SunCell®.
  - Pioneering innovations and blocking intellectual property regarding the SunCell® power source and electrical conversion.
- **Applications Businesses:** Expand the reach on Hydrino® opportunities to derivative markets such as novel compounds, energetic materials, molecular modeling software business, etc.



# Hydrino Reaction

**Explosive Power** 20 MW from 10 millionths of a liter volume.

The hydrino reaction produces extraordinary and unique signatures such as

- extreme ultraviolet continuum emission,
- an essentially fully ionized, high-pressure plasma based on Stark effect measurement by Balmer alpha line broadening,
- and a shock wave that has recently been determined to be about 10 times more powerful than that produced by the same weight of TNT.



# Novel Hydrino Compounds

The hydrino products comprises a new field of chemistry that will be pursued commercially.



# Hydrino Industries

The hydrino products comprises a new field of chemistry that will be pursued commercially.

The energetics of the hydrino reaction produces a shock wave that is the basis of an energetic materials business that will be pursued commercially.

The energetics of the hydrino reaction produces extraordinarily intense short-wavelength light that is the basis of a light source for photolithography, chemical curing, bioremediation and other applications that will be pursued commercially.

The hydrino reaction power can be harnessed by engineered power systems such as the SunCell® having boiler and electrical converter components for the thermal and electrical power markets, respectively.

The molecular modeling software business based on the underlying classical theory will be pursued commercially. Currently 1000's of users have tested the freeware with great satisfaction.

# Other Markets of Interest

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Other multi-billion USD markets exist that can also be impacted by the SunCell invention....



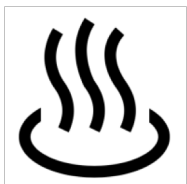
**HEAT**

Opportunities to use Hydrino® process to produce heat for applications including superheated boilers, heat pumps, sintering and other commercial systems that generate heat as a primary function



**LIGHT**

Opportunities to use Hydrino® process to produce light for applications that require or generate light to perform their primary function, e.g. Photochemical, material refining, industrial lighting



**GAS**

Opportunities to use the Hydrino® process to produce Di-Hydrino gas that can be used as an economical replacement for Helium with numerous commercial and industrial applications

# Expanding Reach of Hydrino® Opportunities



## Novel Compounds

- **Market: \$TBD**
- Analytical identification 70% completed for several Hydrino® compounds
- Exhibit unknown magnetic properties
- Samples can be fabricated today
- *Exploring applications with specialty firms*



## Energetic Materials

- **Market \$ 4.6B**
- Initial data shows superiority to TNT: 10X blast, safer
- Completing test reports
- Partnerships model for material
- *Early stage market opportunity*



## Thermal

- **\$8 T market, BrLP focused on \$225B Industrial Heat**
- Leverages SunCell plasma development to date, common subsystems for MHD
- Platform for earlier revenue and testing
- *Outside expert for heat exchanger systems and design*

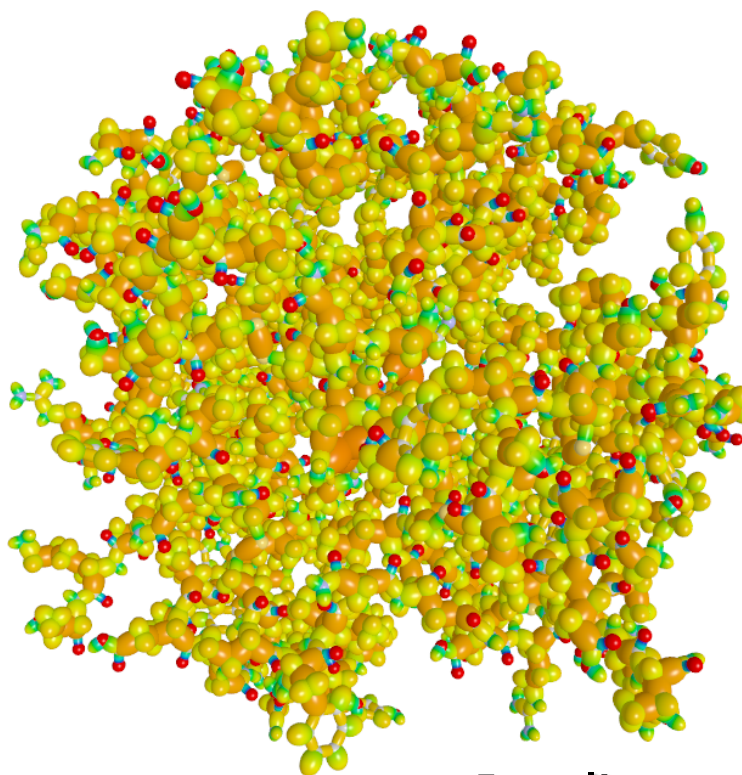
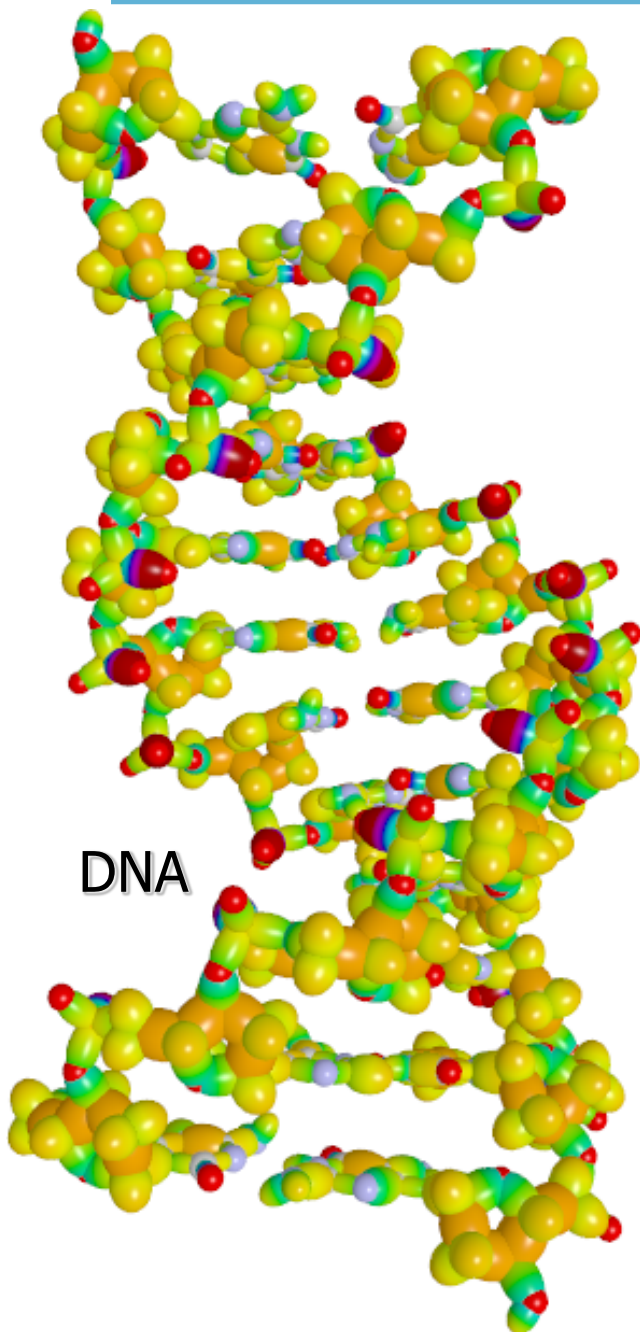


## Power Generation

- **\$3.5 T electricity market**
- SunCell plasma prototype with vendors to refine subsystems, retire risks
- MHD SunCell design nearing completion; commonality with Thermal
- *Outside experts on board*
- *Adding engineering resources*

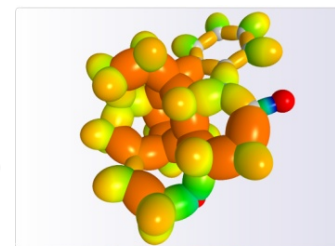
# Theory Based on Classical Laws

## Millsian 2.0: Modeling Molecules

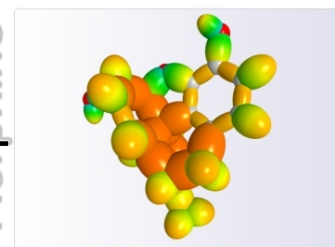


Insulin

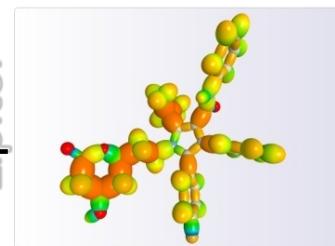
Strychnine



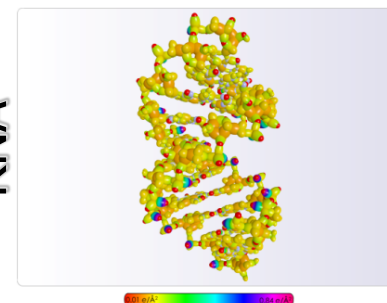
Morphine



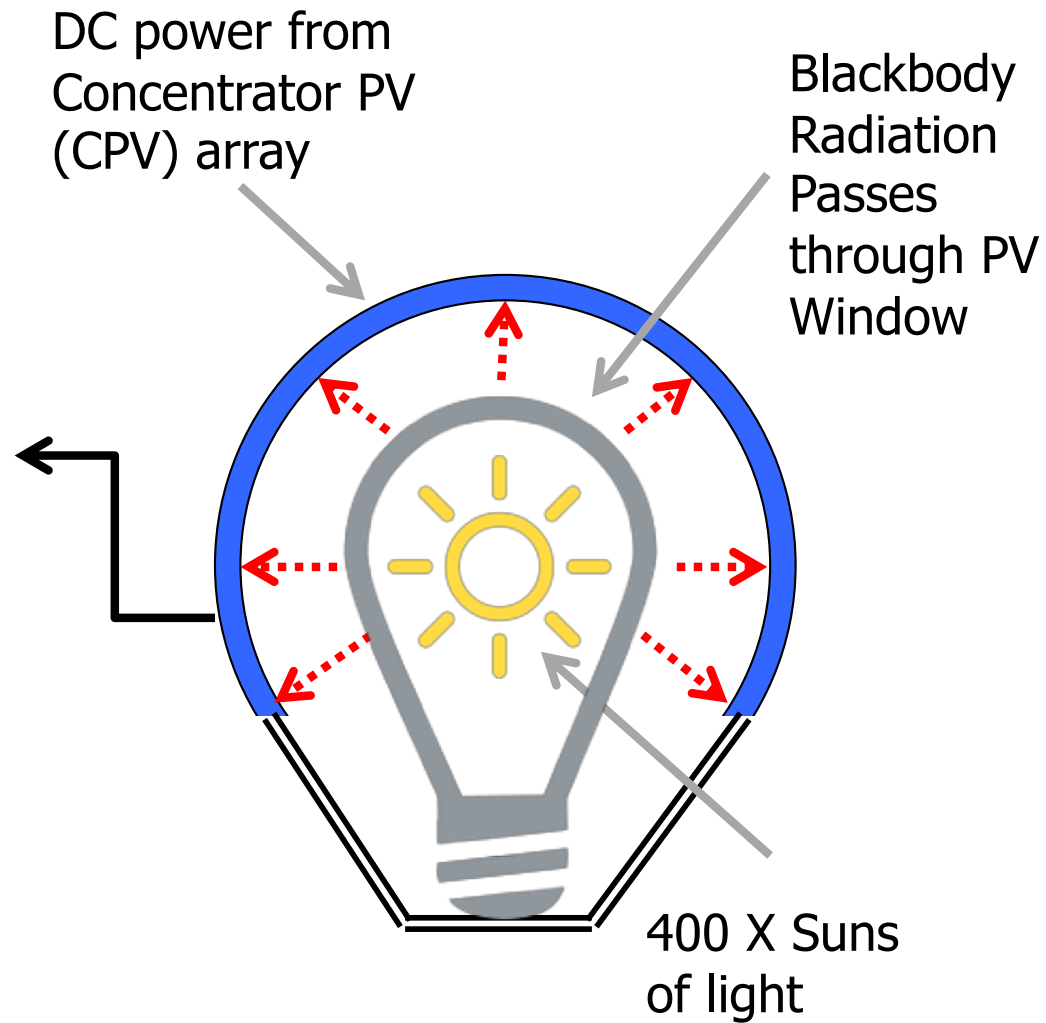
Lipitor



RNA

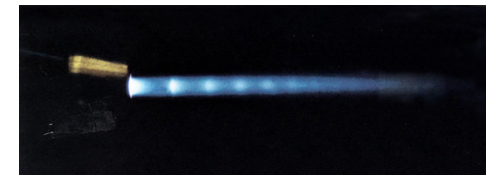
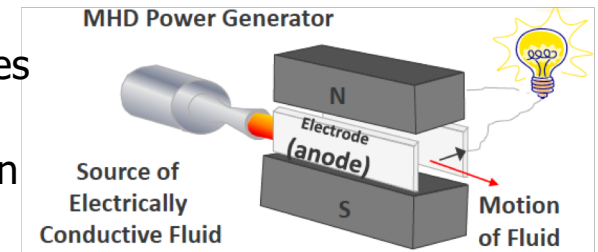


# How the SunCell® Works



# SunCell Next Generation Breakthrough Potential

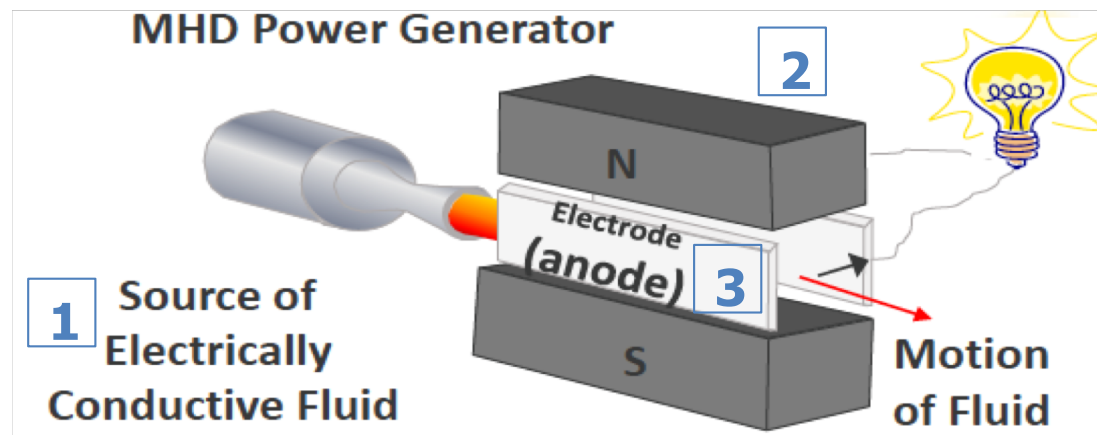
- Direct power extraction (DPE), emerging technology to directly convert thermal & kinetic power to electrical power
- Advantages:
  - Basic research development has been supported by energy agencies worldwide
  - Offers breakthrough power generation efficiency (80%+ conversion efficiency)
  - Simplest system physically possible
  - No moving mechanical parts
  - Extraordinarily compact size with DC power output (power density of 100+ MW/liter theoretically possible; 10,000+ times more compact than CPV)
- SunCell-MHD unique advantages
  - Heat exchanger is an infrared radiator with no moving parts or coolant, self adjusts to heat load as  $T^4$
  - Silver working medium protects rather than corrodes the refractory metal electrodes
  - Conductivity 100,000X that of ion-seeded combustion flame with no loss of conductivity with temperature drop in MHD channel
  - Essentially 100% unconverted heat recovery due to molten silver recirculation rather than gases





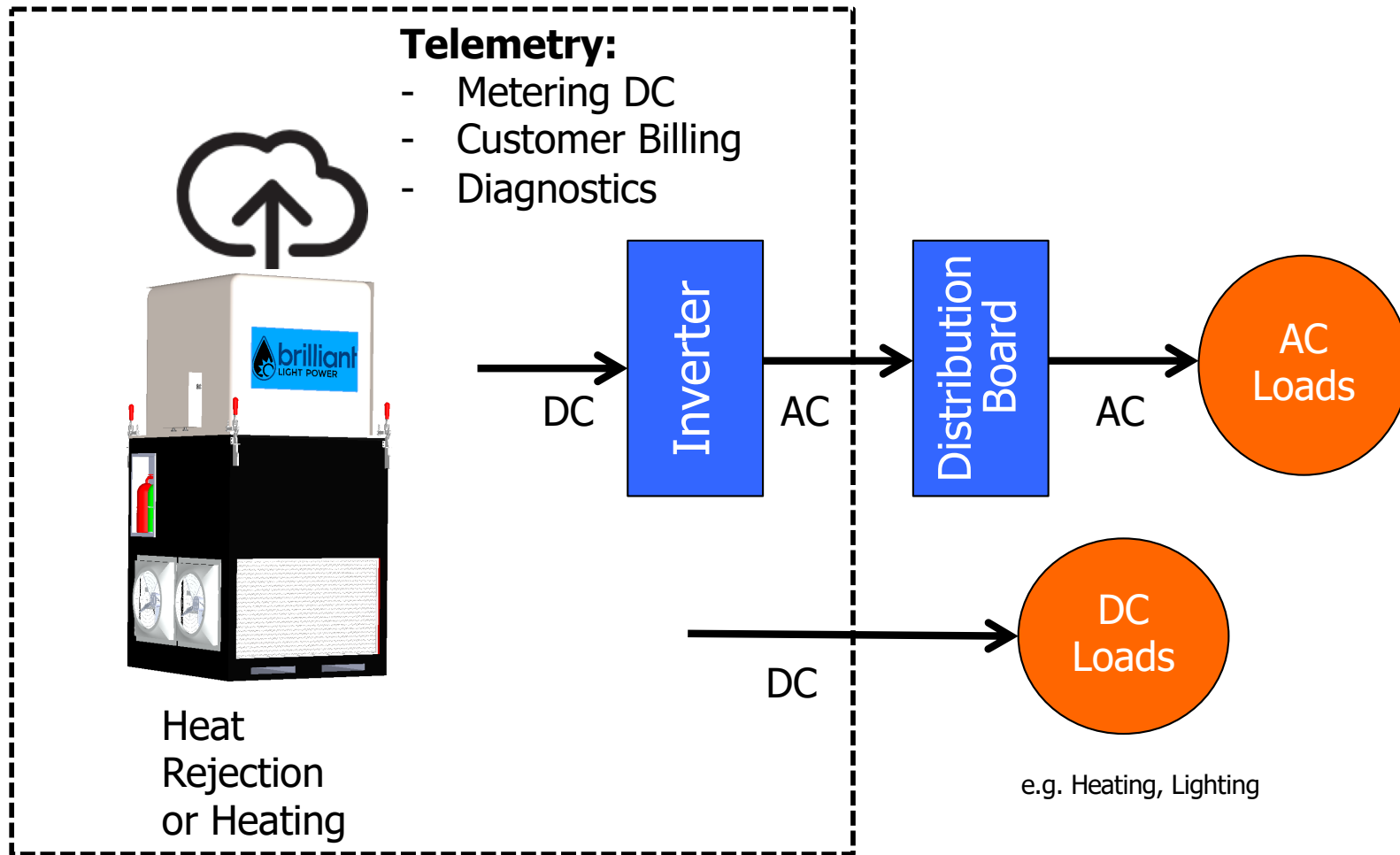
# Magnetohydrodynamic (MHD) Generators

- Typical MHD method is to expand a high-pressure gas seeded with ions through a nozzle to create high-speed flow through the crossed magnetic field with a set of electrodes crossed with respect to the deflecting field to receive the deflected ions and generates an DC voltage output
1. A super-hot plasma is created, ionizing the atoms of the fuel mixture, source of electrically conductive fluid (already in place from SunCell).
  2. The magnetic field deflects positive and negative charges in different directions.
  3. Collecting plates-electrodes, a conductor through which electricity enters for the charges providing a DC voltage out.



Prototype MHD generators have demonstrated some large-scale commercial feasibility. Failure modes of very low conductivity and corrosion of ion-seeded combustion gas eliminated by SunCell-MHD

# SunCell Turnkey System (Basic)

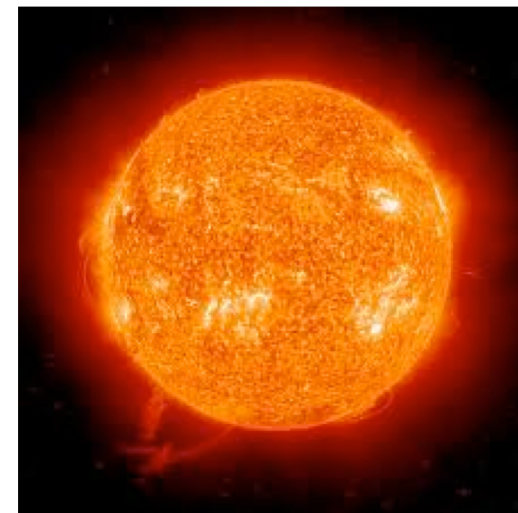


The SunCell® can support either direct DC loads or AC loads with the addition of standard inverter technology as used by the solar industry today.



# The Energy Solution: SunCell®

- Continuous power source, developed with proprietary technology
- Non-polluting: by-product is harmless lower energy state of hydrogen called Hydrino®, lighter than air, vents to space
- System is sealed with H<sub>2</sub>O fuel injected with nonreactive, recirculated silver, absolutely safe materials and operation
- Capital cost estimated at **\$50** per kW at production power & scale, versus **\$3,463** for solar
- No Metering: Electricity sold at about \$0.05 per kWh via a per diem lease fee.
- Low operating cost, only consumable is minimal amounts of water
- Scalable from 10kW to 10 MWs
- Initially heating applications, stationary electric, developing to motive



# SunCell Economics

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Current Annual Gross Earning Capacity of Any Electrical Generator:

- \$1/W

Capital Cost:

- \$60/kW

Life Span:

- 20 years

Capital Cost Annually:

- \$3/kW

Solar Capital Cost (2013):

- \$3,463/kW<sup>a</sup>

Maintenance Cost:

- \$1.20/kW

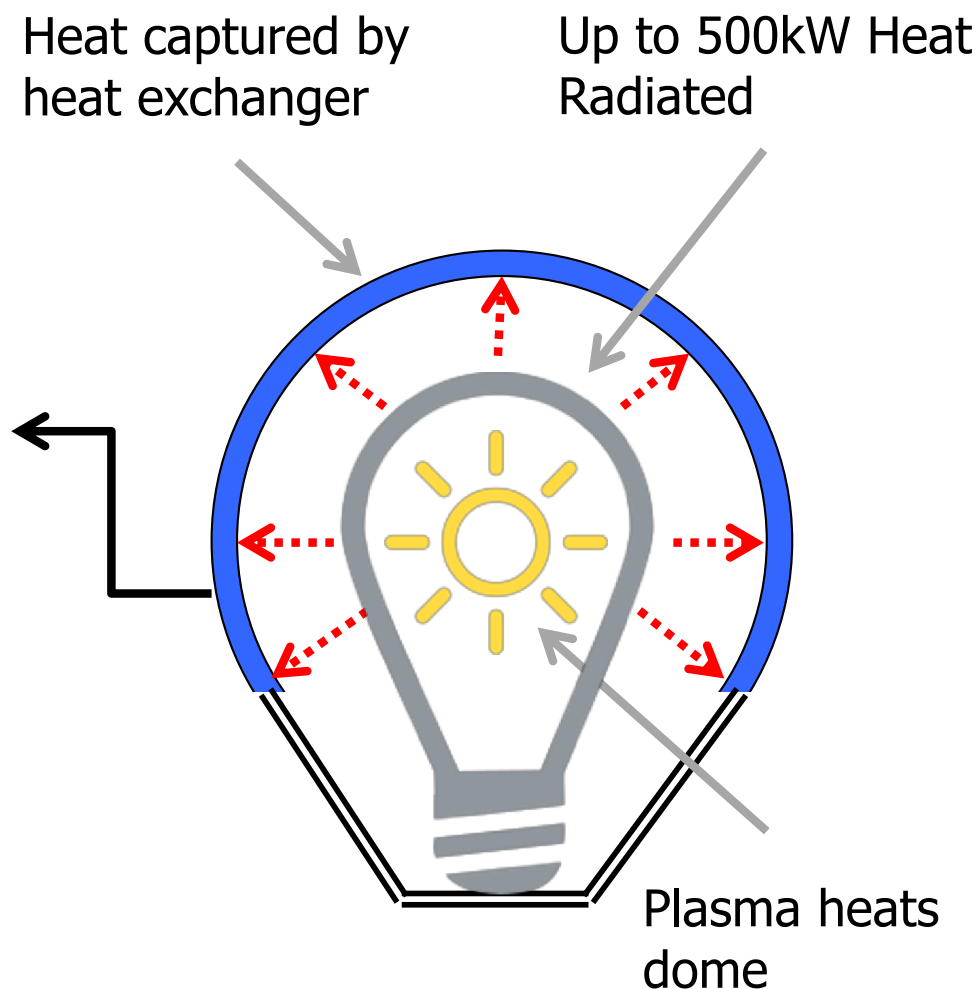
Generation Cost:

- \$0.001/kWh



<sup>a</sup>[http://www.nrel.gov/analysis/tech\\_lcoe\\_re\\_cost\\_est.html](http://www.nrel.gov/analysis/tech_lcoe_re_cost_est.html)

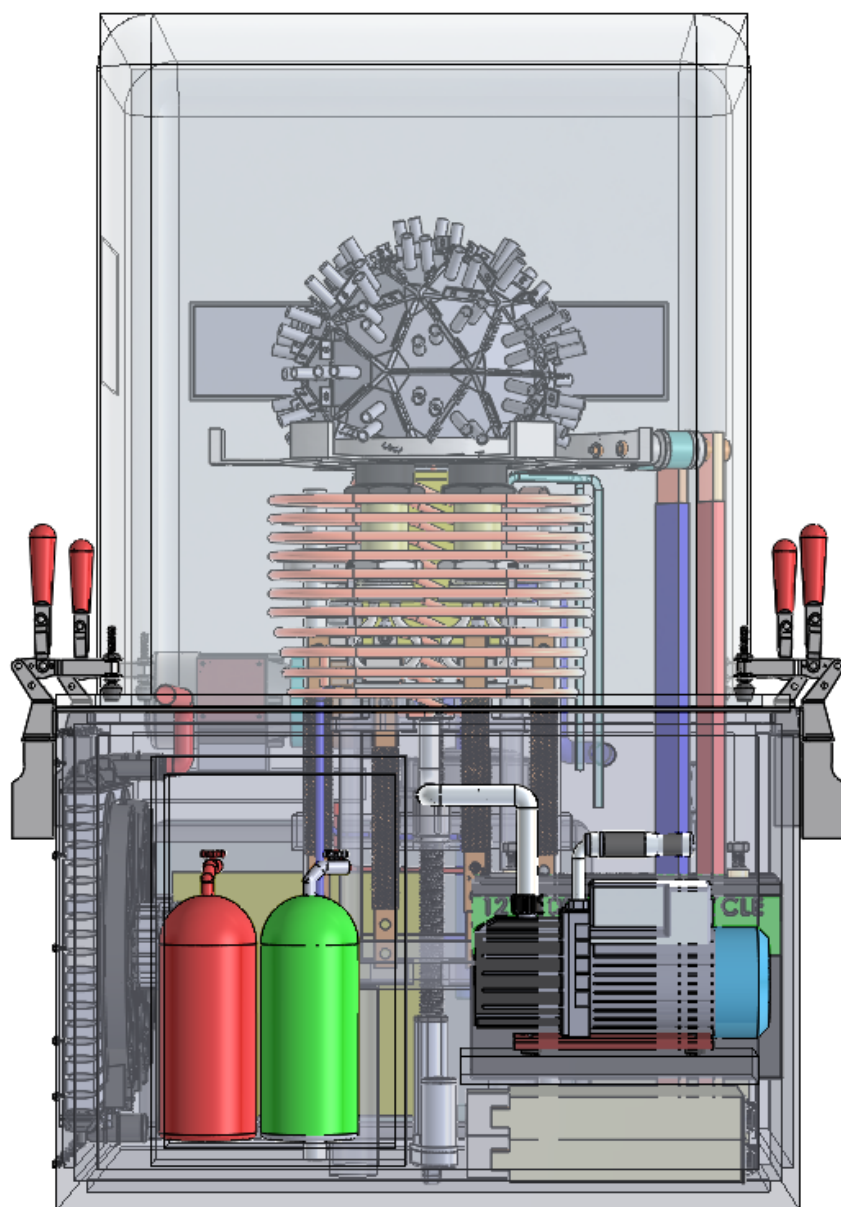
# How the Thermal SunCell® Works



## ***The Process....***

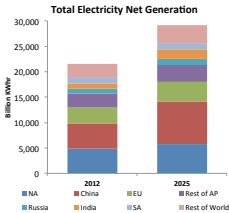
- Plasma is generated through Hydrino® process.
- Plasma heats the blackbody radiator to between 700 and 1700 Kelvin.
- Blackbody radiator emits up to MW's of heat
- Emitted heat is captured by a heat exchanger and heats water, air, or steam to drive a number of thermal applications

# Thermal SunCell® specifications

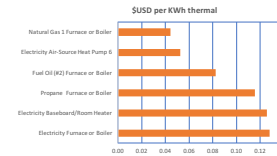


Feature	Est.
Power Output	Up to 500kW THERMAL
Conversion	Heat Exchanger
Thermal Transfer Media	Water, Steam, Air
SunCell dimensions (L,W, H)	0.5x0.5x0.5m
Heat Output	Up to 1700 Degrees K
Blackbody Radiator Power Density	500 kW/m <sup>2</sup>
Weight	100 kg
Warm-up Time	<1 min
Self-consumption power	<3 kW
Response Time (standby to peak)	~100ms
Service Life	15 years
Noise Emission	Sound Proofed
Degree of protection (per IEC 60529)	
Climatic category (per IEC 60721-3-4)	

# Why Heat?



**\$4 Trillion USD Heat market  
vs. \$3.5 Trillion USD Electric**



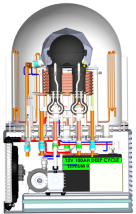
**Bigger  
Market**



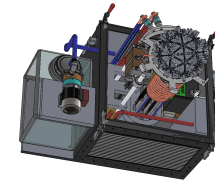
**150kW Electric  
SunCell® = 500kW Heat**



**3x  
Efficient**



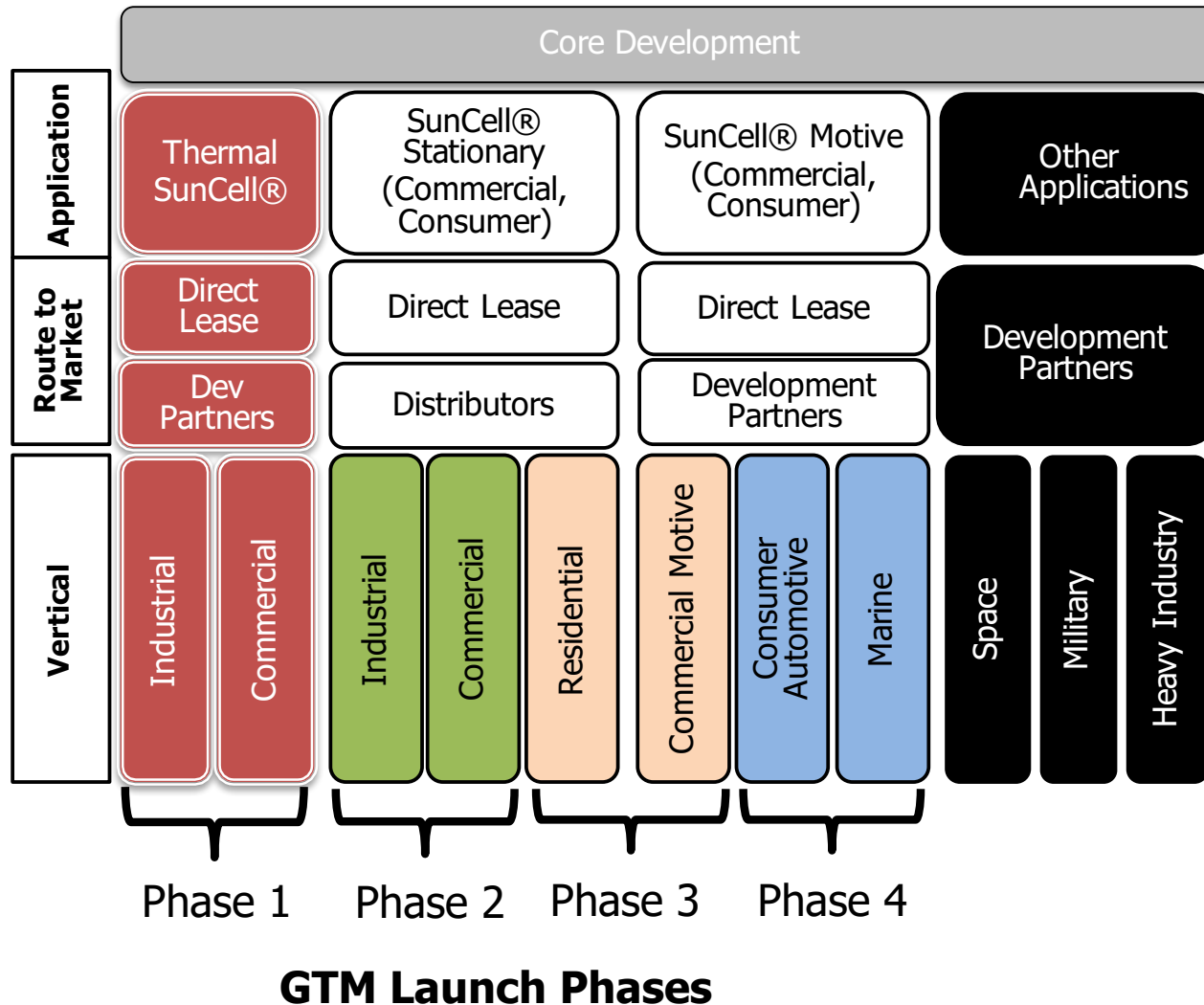
**SunCell® manufacturing cost  
without PV est. \$10,000**



**2.5 x  
Less Cost**

*Reduced time-to-market generating the same revenues from per diem leases per SunCell® a higher margin than electric applications...*

# Brilliant Light Power Go-To-Market Model



**Phase 1** – Thermal Unit-Launch to Industrial, Commercial and Multi-tenant residential markets

**Phase 2** – 150kW Unit - Launch to Industrial, Commercial and Multi-tenant residential markets

**Phase 3** – launch to Residential through Direct Lease and Commercial Automotive with Development Partner

**Phase 4** – Improved/Modified Units – launch to Consumer Automotive and Marine through Direct Lease and Development Partner models

**\*Development Partners** – Engaged at any phase under Development Partner agreement



Validation

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Journal Publications

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Theory

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Optical Power

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Thermal Power

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Shock wave



Over 100 peer reviewed publications.





$$m_0 c^2 = \hbar \omega^* = \frac{\hbar^2}{m_0 \hat{\lambda}_c^2} = \alpha^{-1} \frac{e^2}{4\pi\epsilon_0 \hat{\lambda}_c} = \alpha^{-1} \frac{\pi\mu_0 e^2 \hbar^2}{(2\pi m_0)^2 \hat{\lambda}_c^3} = \alpha^{-1} \frac{\mu_0 e^2 c^2}{2h} \sqrt{\frac{Gm_0}{\hat{\lambda}_c}} \sqrt{\frac{\hbar c}{G}} = \frac{\alpha h}{1 \text{ sec}} \sqrt{\frac{\hat{\lambda}_c c^2}{2Gm_0}}$$

Theory validation by two physics professors.

Theory solves the universe from the scale of subatomic particles to the cosmological scale, successful over 85 orders of magnitude of scale.

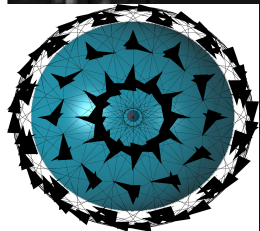
Solved molecular hydrogen and hydrino dimer parameters.

Solved molecular hydrogen and hydrino van der Waals bonding.

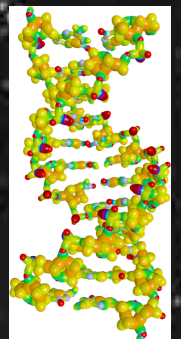
Solved magnetism of hydrino products and magnetic aggregation bonding.

Solved molecular hydrino dimer EPR spectrum.

Solved molecular hydrogen and hydrino quadrupole moments.



# Theory Validations





ISSN 0577-9073

# Chinese Journal of Physics

- HOH catalysis of H chemically produced explosive, fully ionized, EUV-emission plasma.
- 
- 20 MW peak and 250 X gain was measured from a 10 ul shot using absolute spectroscopy.
- 
- Continuous megawatt-level power was recorded.
- 
- A shock wave was produced equivalent to about 10 times more moles of gunpowder.
- 
- The hydrino catalysis reaction product was identified by multiple spectroscopies.

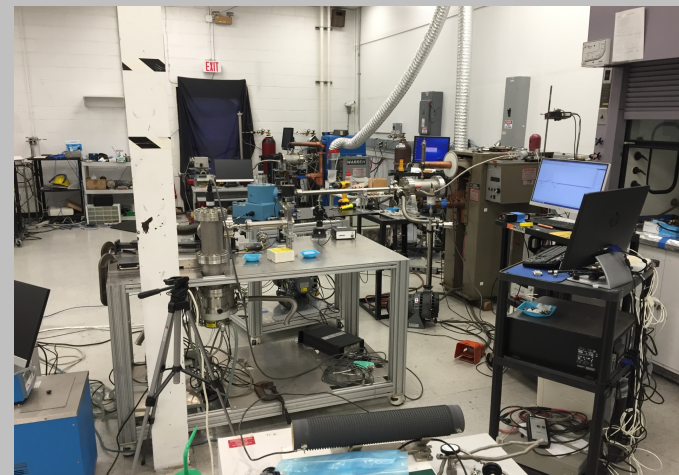
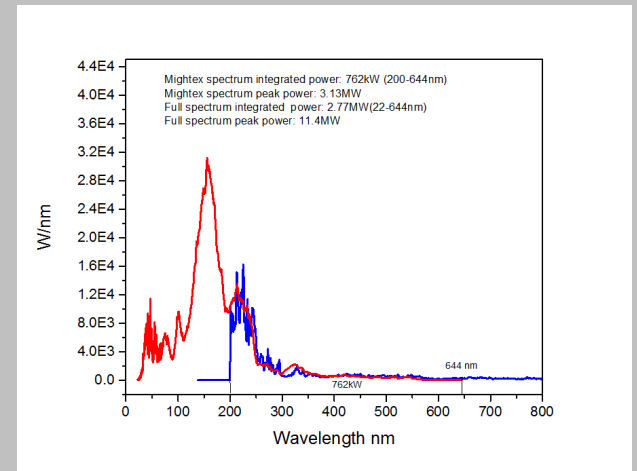


Published by The Physical Society of  
the Republic of China  
Taipei, Taiwan  
<http://psroc.org/cjp>



# Validation of Hydrino Reaction's Extraordinary High-Energy Continuum Light and Optical Power at over 1,000,000W Levels

Using three spectrometers power calibrated by NIST calibration light sources, the optical powers and spectra over the 20 nm to 800 nm region were absolutely determined on hydrated silver shots caused to detonate with a low-voltage, high current pulses. Continuum high-energy, extreme ultraviolet (EUV), radiation at megawatt average and 10-megawatt peak power levels were observed. The EUV spectrum matched theoretical predictions for the electronic transition of a hydrogen atom to the hydrino atomic state with a quantum number of  $\frac{1}{4}$  catalyzed by nascent HOH. The input energy was determined by eliminating the detonation-produced electromagnetic pulse with a shunt resistor. (Recent synchronous calorimetric and wall power measurements validated this approach [link](#)). There is no other explanation for the observed optical energy output of about 30 times the input wherein (i) no energy releasing conventional chemical reaction was possible, (ii) the radiation was predominantly 100 times more energetic than possible under the applied low-voltage condition, and (iii) the radiation comprised unprecedented megawatt-level continuum light with most of the radiation in the short wavelengths.



# Validation of Hydrino Reaction Power at over 100,000W Levels

Using a commercial Parr water bath calorimetry on silver shot detonations, the detonation-produced electromagnetic pulse that interfered with ignition input power determination was eliminated to give results that are substantially unchallengeable.

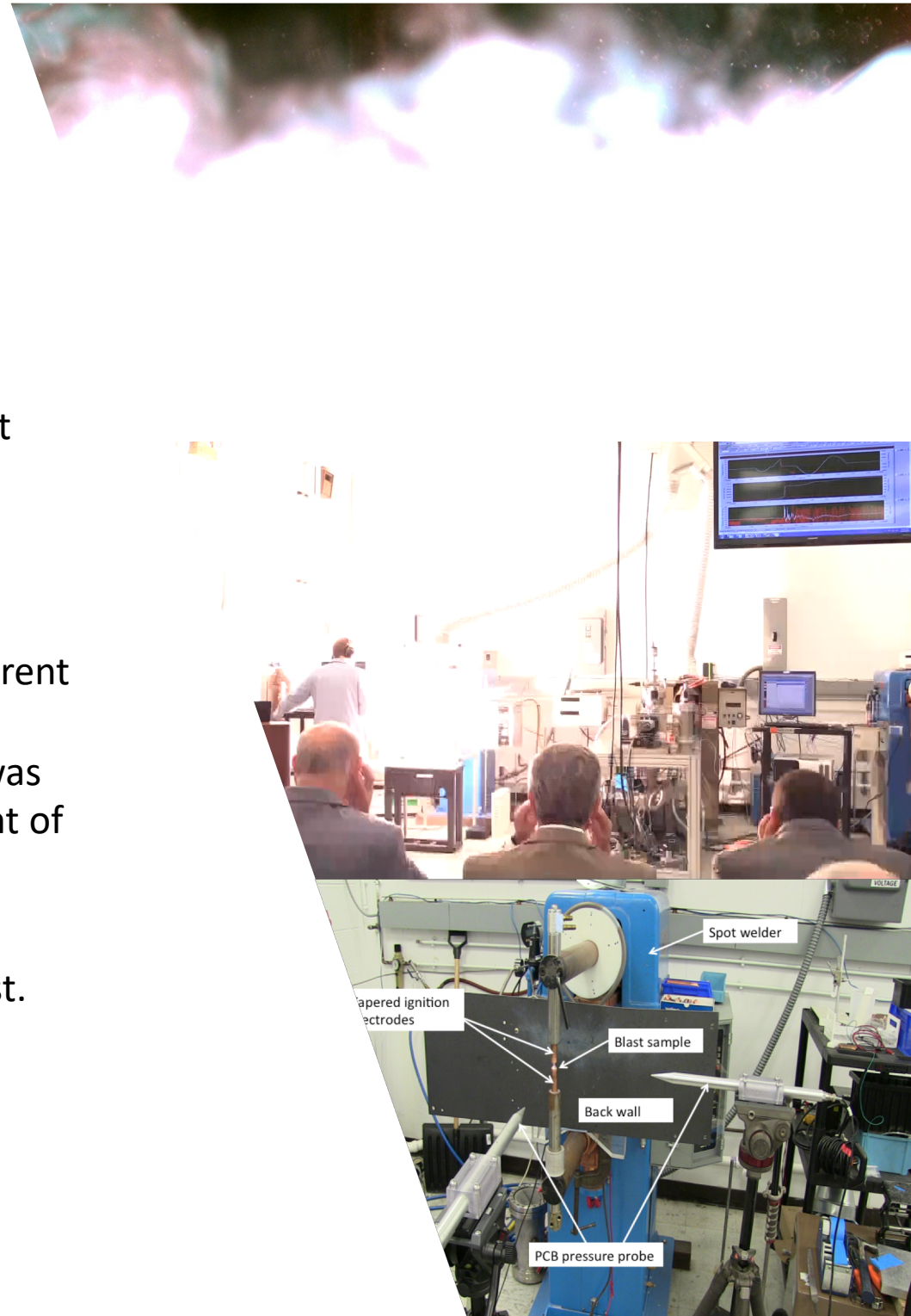
Test	$t_f - t_{det}$ [ms]	$E_{out} - E_{Weld,Total}$ [J]	$(E_{out} - E_{Weld,Total})/(t_f - t_{det})$ [kW]
022719(1)	1.19	474.9	399
022719(2)	0.92	256.8	279
022819(1)	1.75	372.8	213



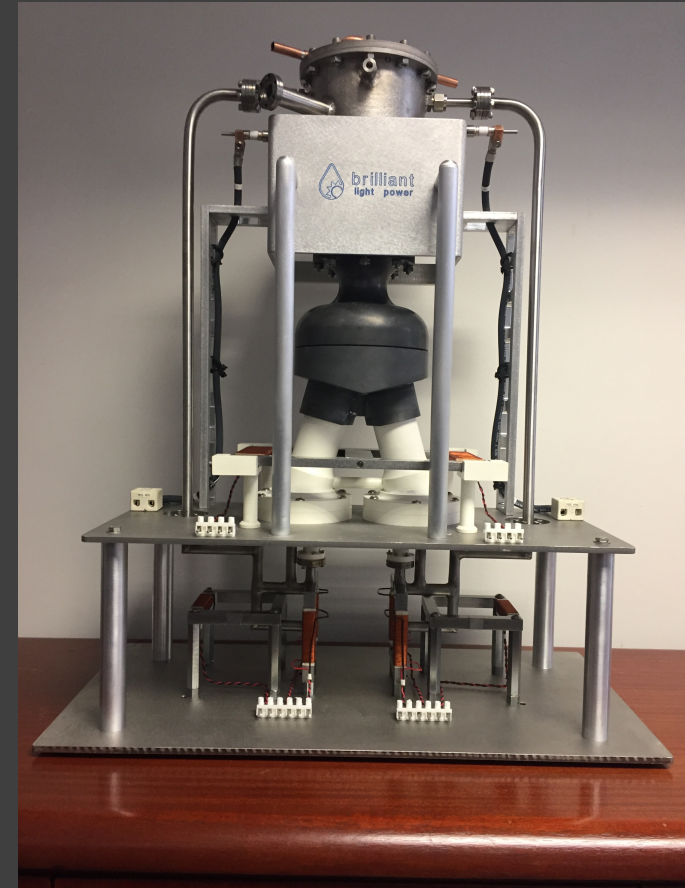
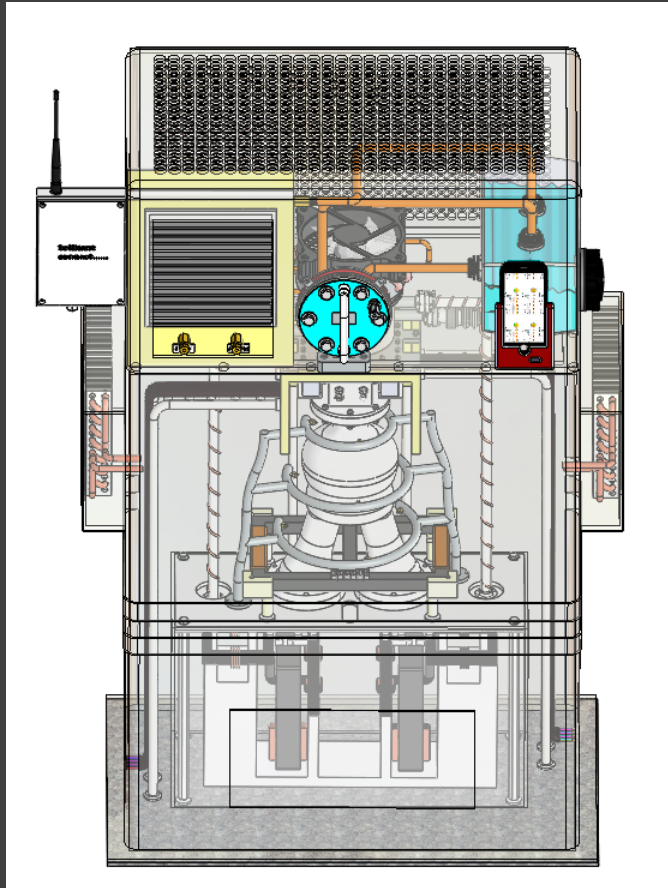
# Energetic Materials Validation

Dr. Joseph Renick, former Chief Scientist at Applied Research Associates analyzed the characteristics of Brilliant Light Power's energetic hydrino reaction. Based on the shockwave propagation velocity and the corresponding over pressure, the high-current ignition of water in a silver matrix was measured to produce a shock wave that was 10 times greater than an equivalent weight of TNT.

Department of Defense opportunities exist.

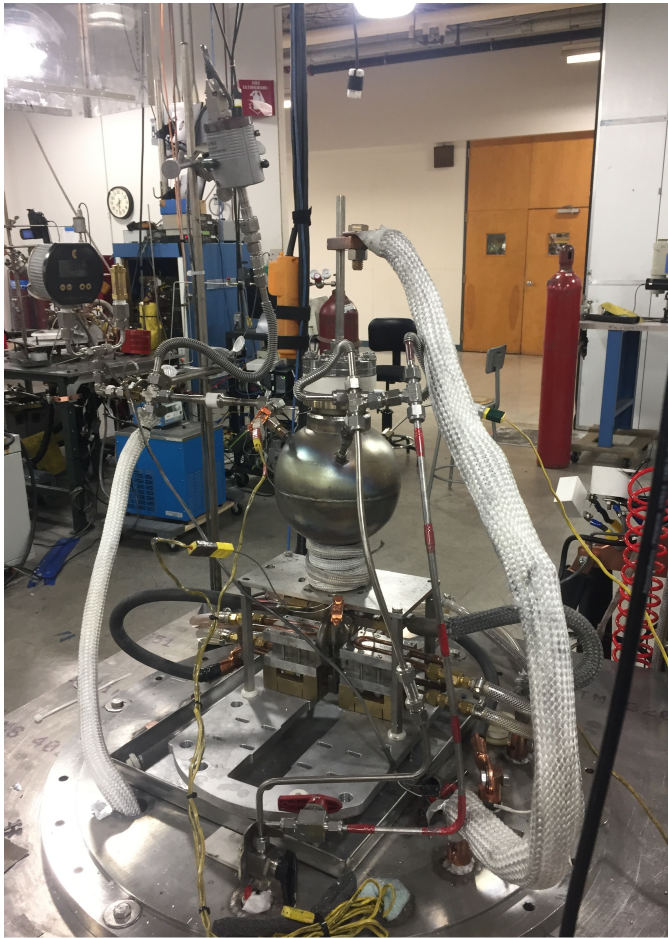






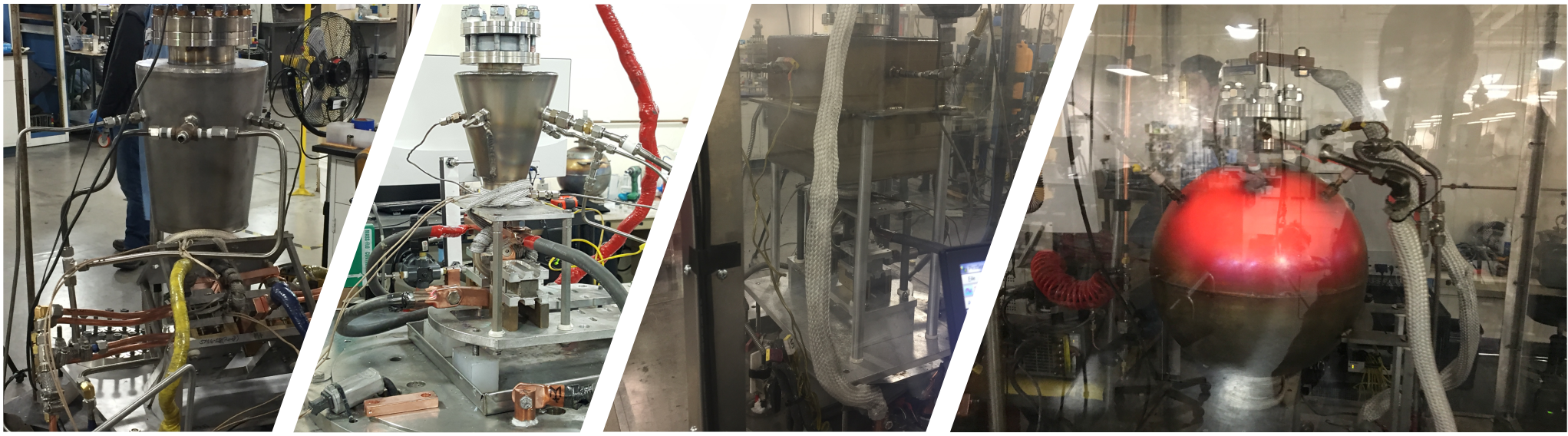
# SunCell<sup>®</sup> with MHD Converter





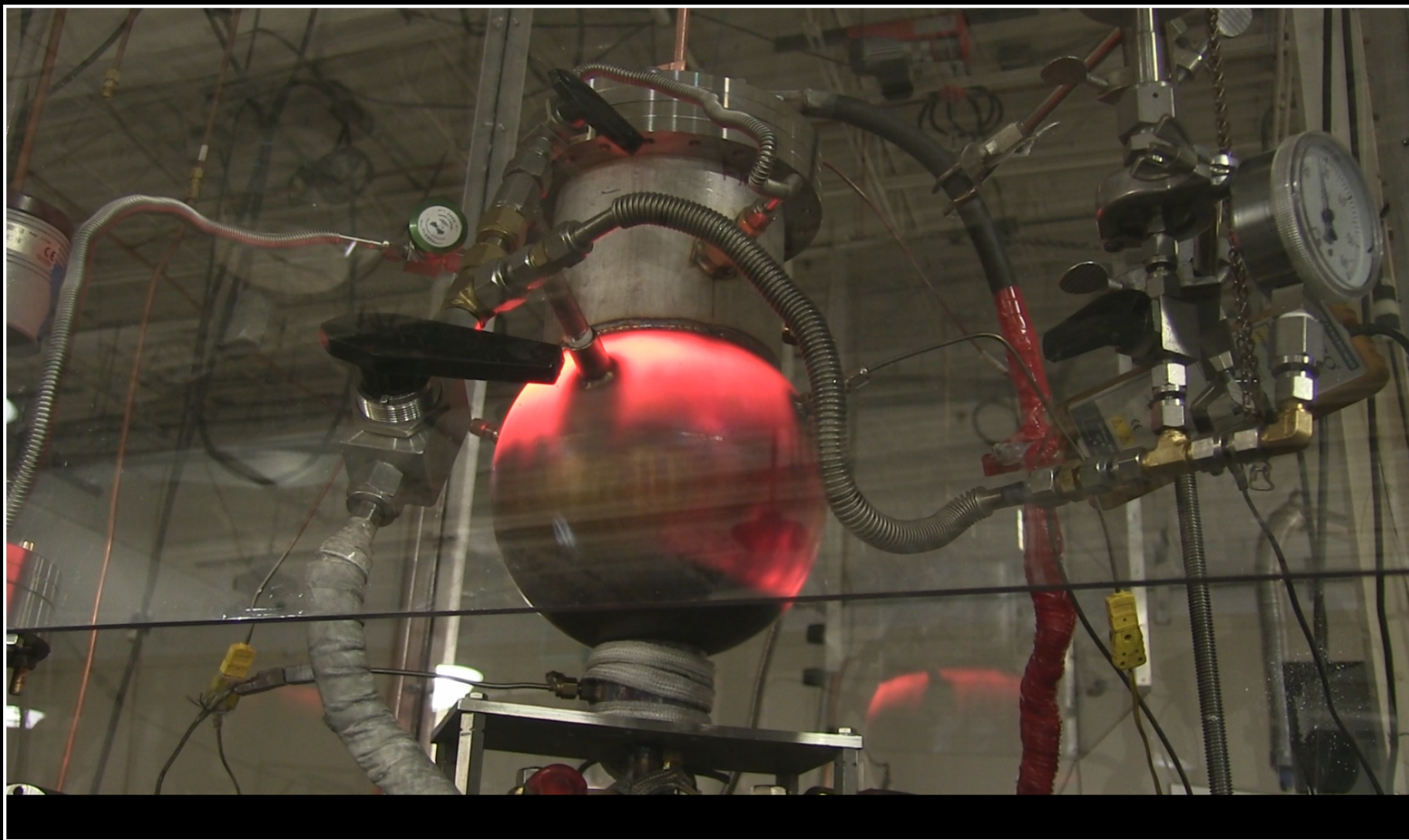
Testing Geometry, Scale, Gas Composition and Flow Rate, Ignition Systems and Parameters, Power Measurement, and Seals



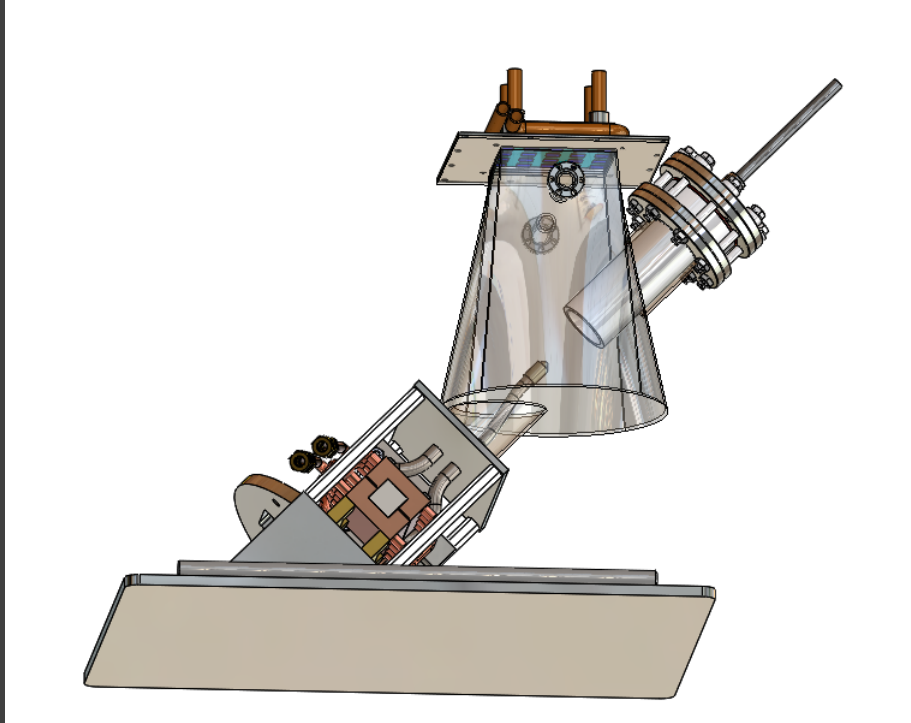


Testing Geometry, Scale, Gas  
Composition and Flow Rate,  
Ignition Systems and  
Parameters, Power  
Measurement, and Seals  
Cont'd





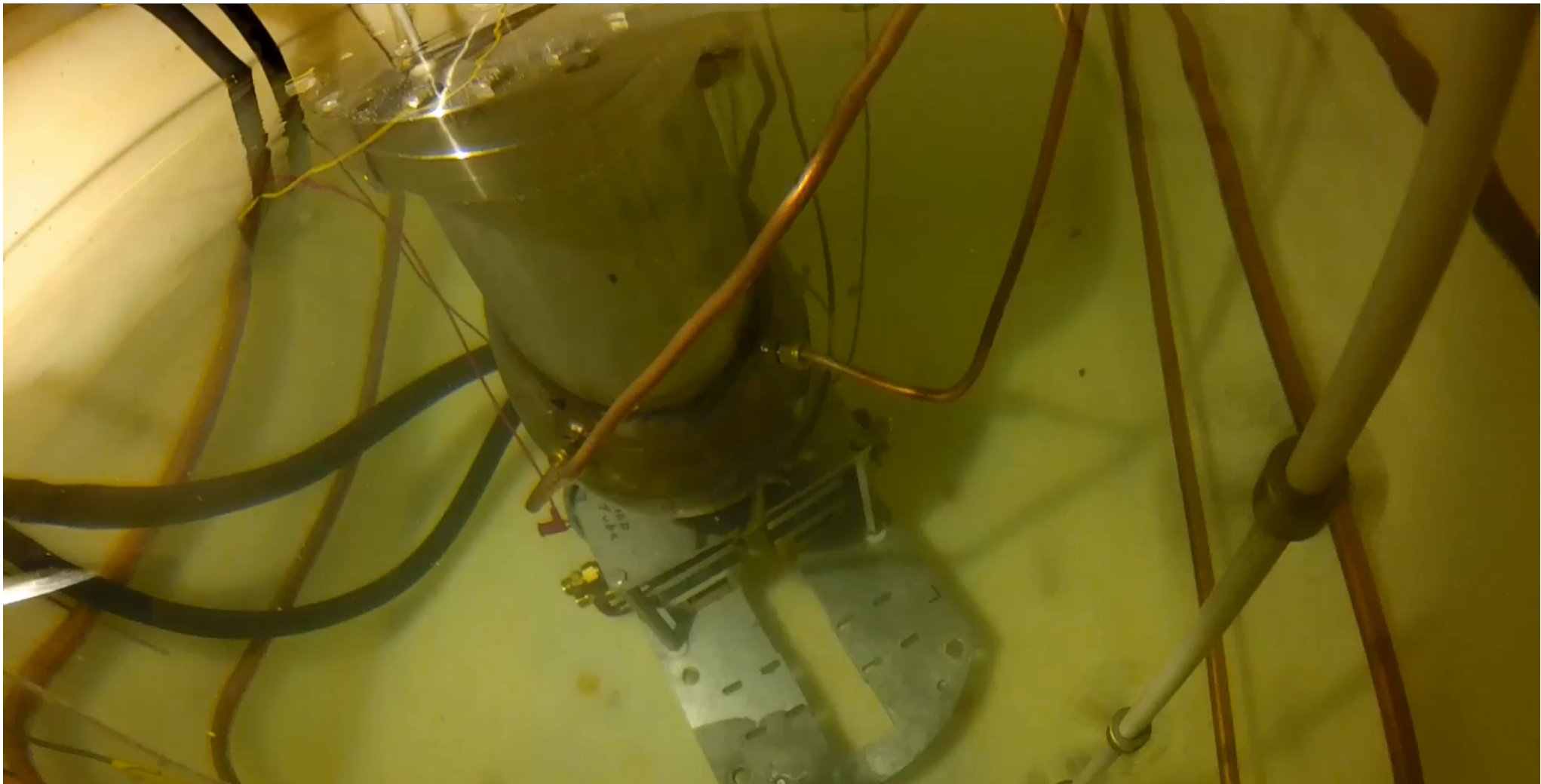
SunCell® Engineering Solutions and Reaction Condition Development and Testing



## Taper-Slant Cell with Concentrator Photovoltaic Converter

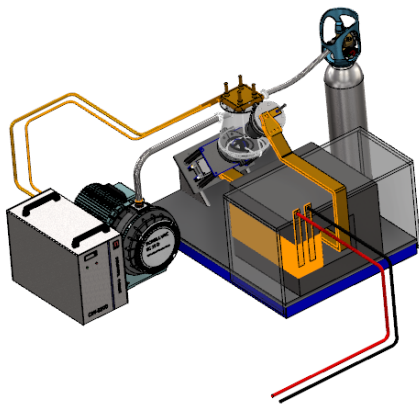
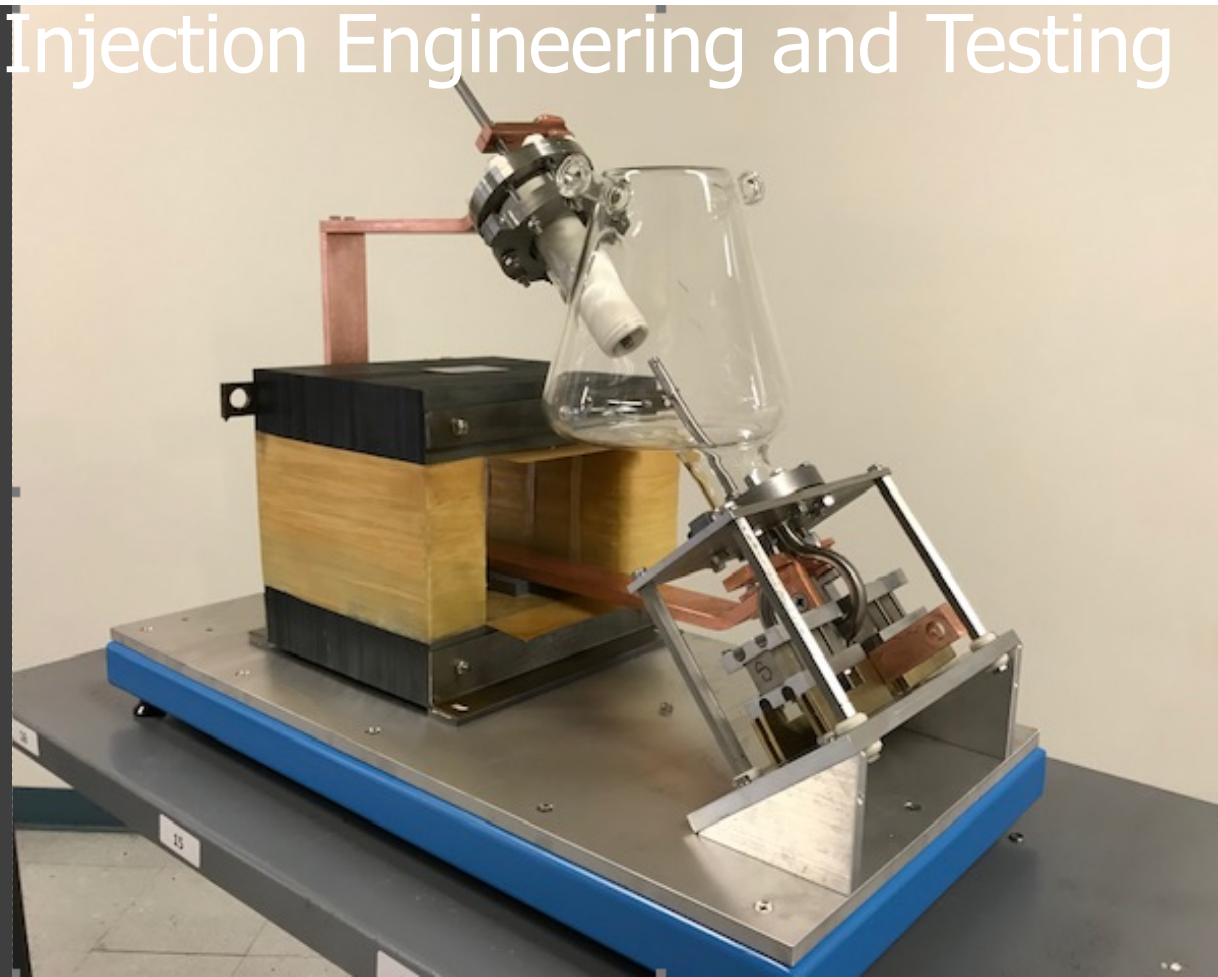
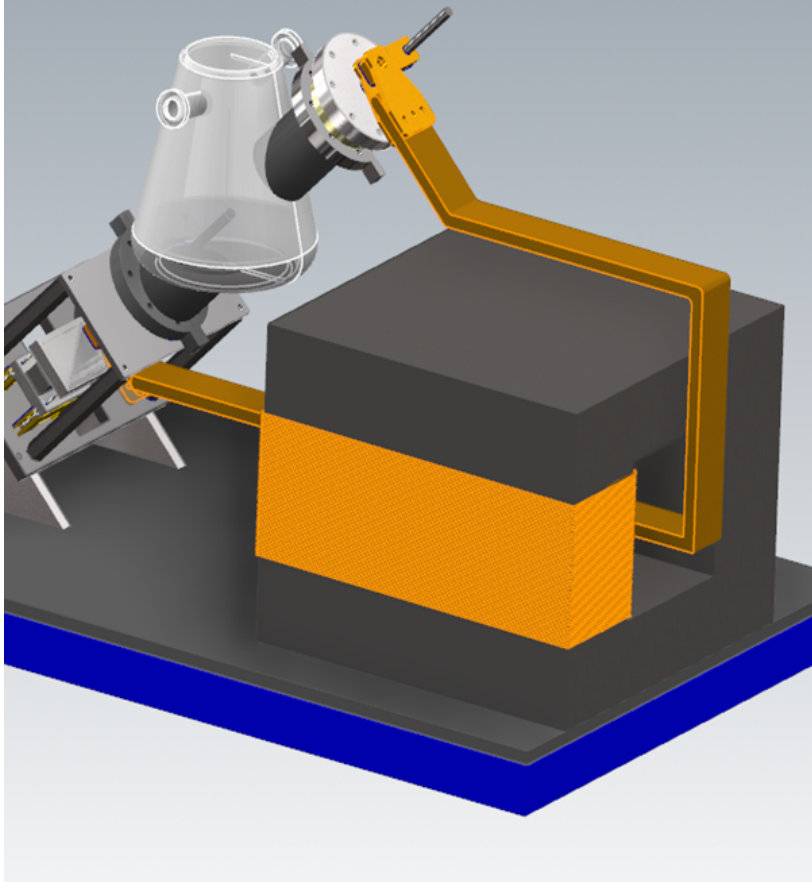
# SunCell® Hydrino Reactor Power Conversion and Calorimetry (boiling video)

Water bath test of the SunCell® hydrino reactant gas mixture comprised hydrogen fuel added to argon, and a trace gallium oxide inventory in a large reservoir of liquid gallium served as a source of O for HOH catalyst. The molten gallium was injected from the reservoir to a counter electrode and recycled to maintain very low voltage atmospheric pressure plasma. The engineering has advanced to a stage to permit very long duration continuous operation. Heat exchange to a coolant facilitates power balance measurements and is a step towards power utilization in commercial designs.

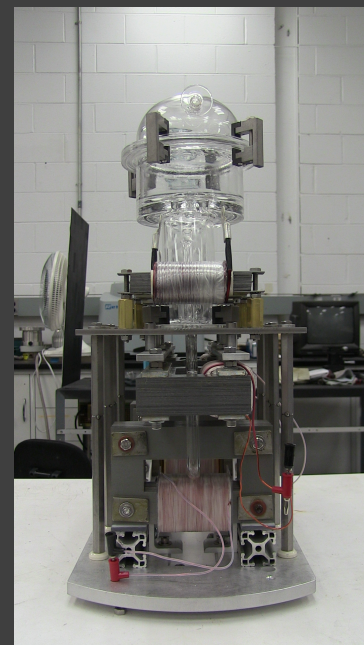
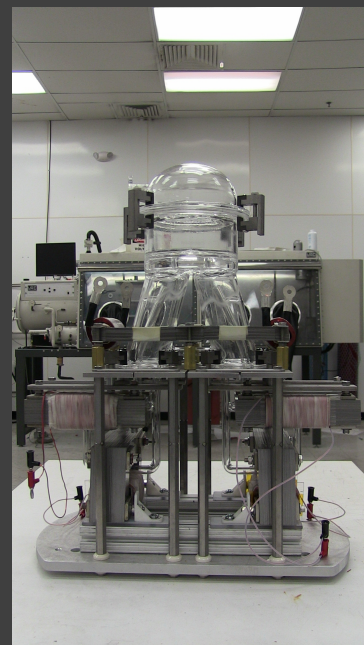
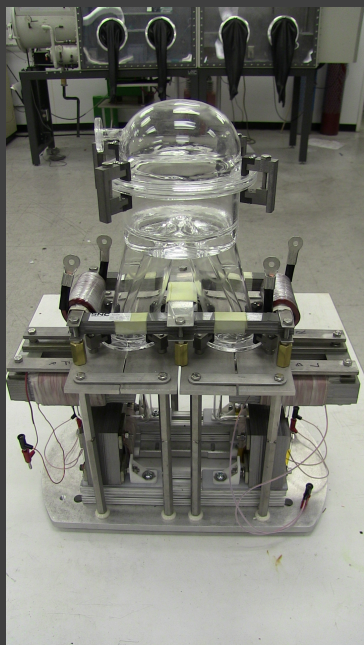
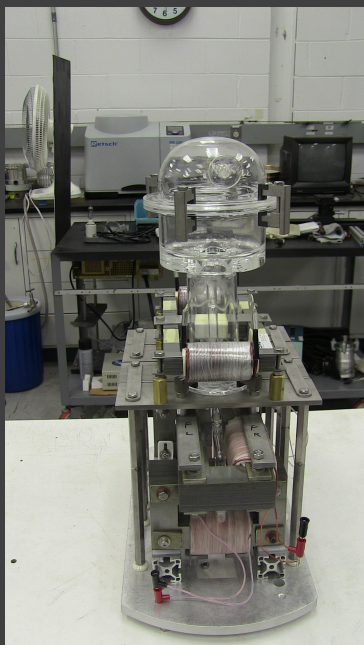




# Induction Ignition and Injection Engineering and Testing



60 Hz Induction  
Ignition SunCell®

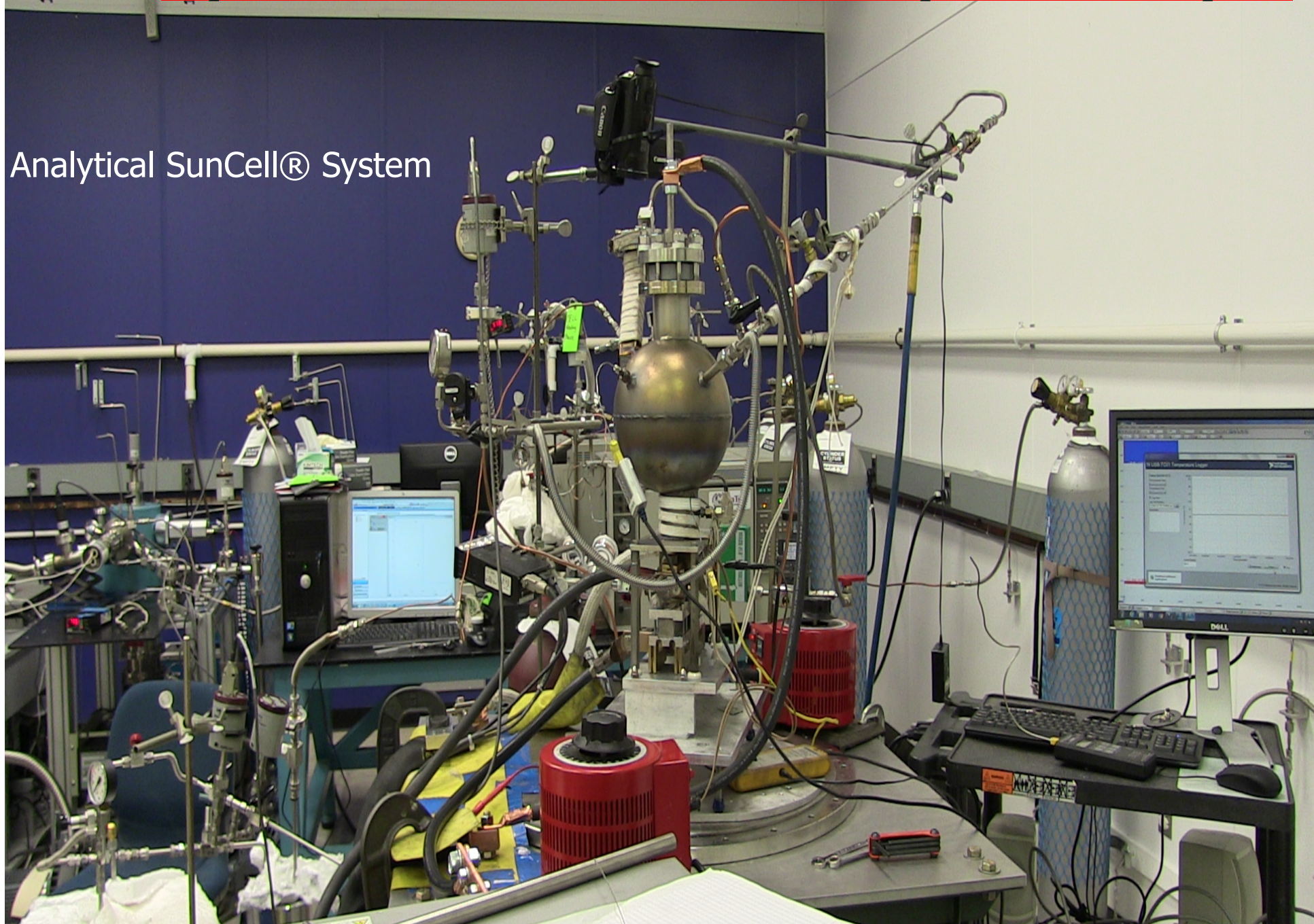


# Induction Injection and Ignition Systems

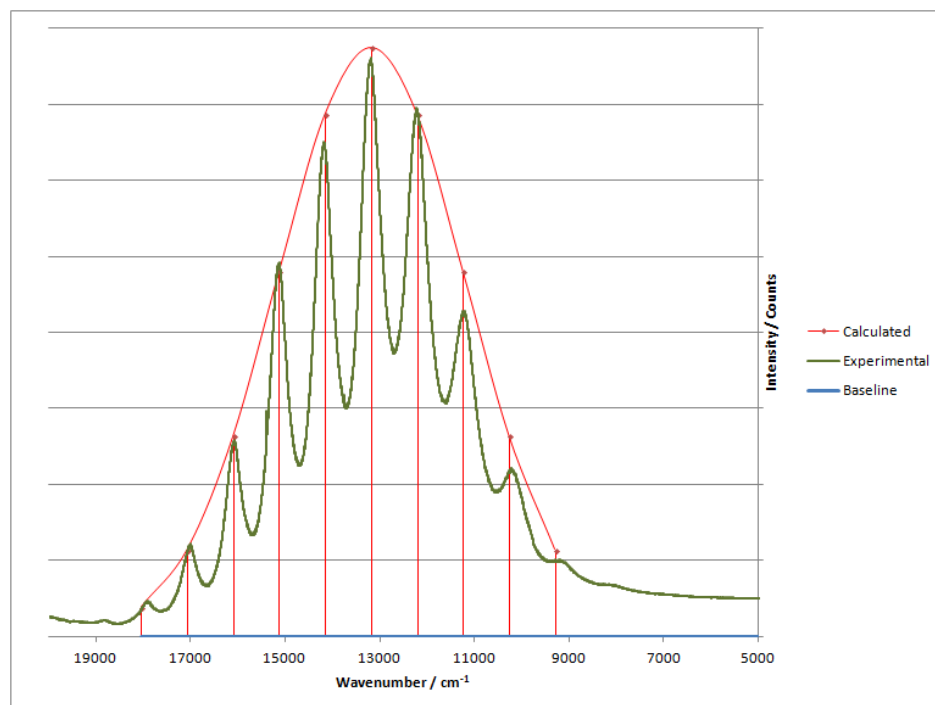


# Hydrino Production for Analytical Analysis

Analytical SunCell® System



# Methods for measuring Hydrino® product



- GUT
- Molecular modeling
- H(1/2) and H(1/4) hydrino transitions observed by continuum radiation
- Astronomy data verifying hydrinos such as H(1/2), H(1/3), and H(1/4) hydrino transitions
- H (1/4) spin-nuclear hyperfine transition
- Hydrino trapped on witness plates and in alkali halide-hydride crystals
- Polymeric molecular hydrino compounds
- In situ H<sub>2</sub> (1/4) gas synthesis in argon and analysis

- H<sub>2</sub> (1/4) ro-vib spectrum in crystals by e-beam excitation emission spectroscopy
- H<sub>2</sub> (1/4) X-ray photoelectron spectroscopy (XPS) binding energy
- H<sub>2</sub> (1/4) Fourier Transform Infrared (FTIR)
- H<sub>2</sub> (1/4) Inverse Raman effect (IRE)
- H<sub>2</sub> (1/4) Photoluminescence spectroscopy
- Electron Paramagnetic Resonance Spectroscopy (EPR)
- Time of Flight Secondary Ion Mass Spectroscopy (ToF-SIMS) and Electrospray Ionization Time of Flight (ESI-ToF) identification of hydrino compounds
- MAS H NMR
- Thermogravimetric analysis (TGA)
- Cryogenic gas chromatography
- Fast H in plasma including microwave and rt-plasmas
- Rt-plasma with filament and discharge
- Afterglow
- Highly pumped states
- H inversion
- Commercial differential scanning calorimetric (DSC) and water flow calorimetry with multiple solid fuels chemistries
- Arbin-Instrument measured electricity gain over theoretical in CIHT cells
- SunCell® fully ionized energetic plasma and electromagnetic pulse
- 20 MW extreme ultraviolet NIST-calibrated optically measured power in shot blasts
- Commercial bomb calorimetry of energetic shots
- Shock wave 10X TNT





**Thank you!**

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