The Electrical Polarization Process: A Revolutionary Approach to Water Purification and Energy Generation.

Terms and Definitions

- H2O – **2**x **H**ydrogen and **O**xygen covalently bonded to form water
- HHO – 2x **H**ydrogen and 1x **O**xygen atoms disassociated from water
- DCE – **D**irect **C**urrent **E**lectrolysis – Traditional amperage disassociation of gases
- EPP – **E**lectrical **P**olarization **P**rocess – Voltage disassociation of gasses from water
- WFC – **W**ater **F**uel **Cell** – Metal (stainless steel) plates or tubes submerged in water
- VIC – **V**oltage **I**ntensifier **C**ircuit – LC circuit that enabled the EPP to take place
- EOP – **E**qual **O**pposite **P**olarity – Describes proper waveform delivered to the Cells
- LPM – **L**iters **P**er **M**inute – Measurement of HHO gas produced from Cells
- PSU – **P**ower **S**upply **U**nit – Device supplying power from energy source (AC outlet)
- Electrode – A single piece of metal in a WFC
- Covalent Bond – Molecular bond between Hydrogen & Oxygen to form water (H2O)
- Volts – Amount of electron "push" in a circuit (eg. water pressure)
- Amps – Amount of consumed electrons in a circuit (eg. water flow)
- Electrolyte – Chemical additive used in water to make it more conductive
- Circuit – A path for electrons to flow – Inductors, Capacitors, Diodes, Resistors
- Capacitor – Circuit device that temporarily stores energy (voltage)
- Inductor – Circuit device that temporarily stores energy (magnetically)
- Diode – Circuit device that only allows current flow on one direction
- Current – Electron flow within a circuit (Amperage)
- Transformer – Inductors that change voltage and amperage levels
- LC Circuit – Inductor (**L**) & Capacitor (**C**) that reflects energy at a specific frequency
- Resonance – Condition achieved at specific frequency in an LC circuit
- Cells – Term for metal plates or tubes submerged in water (component of WFC)

Understanding The Prior State-Of-The-Art

To understand the Electrical Polarization Process (EPP), you must first have a clear understanding of Traditional DC Electrolysis. In the traditional sense, a power source such as a 12v battery (PSU) is connected *directly* to a series of steel plates submerged in water. However, a small amount of gas is produced. Natural water itself is a *resistor* to current flow. Therefore, the water must be augmented with a chemical additive such as salt, baking

soda, potassium hydroxide, or other chemicals. This in turn makes the water much more conductive, by facilitating the flow of amperage (electrons) through the water.

Electrical Energy can be summarized by two functions: Voltage and Amperage. Voltage is the amount of electron "push" on a circuit, Amperage is the amount of consumed electrons (current). In simple terms, Voltage "pressure" is not "consumed" in a circuit, but Amperage is.

To understand this, imagine a pipe filled with water. The amount of water pressure in the pipe is the Voltage and the volume of water flowing through the pipe is the Amperage. It is also important to note that in an electrical circuit, when current (amperage) flows, voltage is decreased (much like pressure in the pipe). Blocking the pipe (reducing current) means the pressure increases (much like Voltage).

Traditional DC Electrolysis consumes extremely high Amperage at low voltage. As amps flow, voltage decreases. During operation, the metal plates submerged in water can get extremely hot and pose a complete meltdown risk. Additionally, the electrolyte can release unsafe gasses in the process.

Traditional Electrolysis consumes more electrical-energy than the equivalent gas-energy that it produces. Simply put, "traditional" Electrolysis is inefficient, mathematically finite, requires chemical additives, and poses serious risks such as hydrogen Cell meltdown.

Understanding The Electrical Polarization Process (EPP)

The EPP performs the same function as Electrolysis, but in an inverse fashion to traditional DC Electrolysis. Instead of utilizing Low Voltage at High Amperage to convert H2O to HHO gas, the EPP utilizes High Voltage at Low Amperage. Unlike traditional DC Electrolysis, no chemical additives or electrolyte is necessary for the EPP to take place. The EPP operates with pure, natural water by utilizing the Voltage Intensifier Circuit's available voltage potential (further explained herein). As voltage potential increases in the Water Fuel Cell at a "tuned" frequency, gas "increases production measured *beyond* a linear-effect". As in the case of traditional Electrolysis, gas production is a linear-effect as to the amount of amperage consumed.

Understanding The "Current" State

What must be understood is the energy usage of the Water Fuel Cell (WFC) ***Versus.*** the energy usage of the entire circuit (VIC). In a DCE setup, there is essentially no circuit; it's just a battery (or PSU) and metal plates (Cells). Energy is consumed and measured as a whole (energy input to system), because what you put into the system *is the same as* what you put into the Cells. For instance, a DCE setup will consume ~400 Watts of continuous energy to produce 1 Liter Per Minute (LPM) of HHO. This, for example, could equate to 12 Volts at 33 Amps of power.

The energy measurement for the EPP is a bit different. There are essentially two places of measurement for energy consumption. The first measurement location is the total energy input to system (much like DCE). This is the total power used to make the system operate (delivered from the PSU). This, for example, could equate to 29 Volts at 13 Amps (approximately 400 watts). However, this input power is not the same energy that is being delivered to the Cells (metal plates / tubes). With the EPP, a special transformer is utilized that performs multiple functions—namely converting low voltage to high voltage.

Therefore, the energy being delivered to the Cells is not the same energy being supplied to the input of the system (PSU). To summarize the EPP setup, energy is measured both at the input source (PSU), and the Cells.

As it stands as of writing this document, DCE is more efficient than the EPP. This is a result of insufficient research, testing, and knowledge of advanced transformer circuit dynamics than I can presently provide.

The present focus of this document and the EPP technology is the amount of energy at the Cells (second measuring point). This is what truly sets apart the EPP from DCE—Energy Consumption (and Production) at the Cells. As voltage levels increase (without Amp flow), gas production increases exponentially. For this matter, the EPP's efficiency is theorized to be near infinite, but present conditions, knowledge, and understanding of the technology is limited. With further research and development, the EPP could reach efficiency levels up to and far beyond DCE.

Advantages of EPP

- NO risk of WFC meltdown (low Cell amperage)
- NO electrolyte or chemical additives
- Theoretical near infinite limit of efficiency
- Gasses produced are *pure* Hydrogen and Oxygen (HHO) along with ambient dissolved gasses (oxygen, nitrogen, CO2). No harmful gasses produced.
- Ignited HHO gas produces *absolutely* pure H2O (surpassing distilled water)
- Extreme Electrode lifespan (no chemical additives, low amperage)
- Utilizes any form of natural water (does not require processed or distilled water)

Origins of the Technology

Stanley Meyer began developing the Water Fuel Cell in 1975. Through a period of over 20 years, he developed and patented numerous technologies pertaining to the WFC, hydrogen gas management, vehicle engine integration, and *much* more. His patents are available publicly in multiple countries.

Unfortunately, Stanley Meyer passed in March of 1998, with his death surrounded by conspiracy and mystery.

Meyer was not just some fringe garage-inventor. He had many accolades including working for the Battelle Foundation, NASA's Gemini project, and the EBED "Star Wars" defense project. He attended the Ohio State University and served in the Military. He authored numerous patents in oceanography, cardiac monitoring, and even banking systems. Some of his patents were even reportedly prioritized, given the significance of his technologies.

Stanley was recognized by many national and international organizations. He was even featured in “Who’s Who of America” in 1993.

“Defying the Laws of Physics”

Many claim that Meyer’s technology defied the laws of physics. In 1996 an Ohio court ruled Stanley guilty of “gross and egregious fraud”. It is important to note, however, that this court case was brought on by *only two* of his dealership investors. The WFC was “later examined” by “three expert witnesses” which to this day have yet to be identified, questioned, or interviewed. The scenario surrounding these court cases were questionable at best. Even a local retired Darke County Judge, Roger L. Hurley, defended Stanley to his death.

Some point to the fact that patents can be granted whether or not a device does what it claims to do. I have read (yet to confirm) that Meyer’s patents were granted under Section 101 of the US Patent Office which required successful demonstrations to the Patent Review Board.

Perpetual Motion, Zero-Point Energy, and Other Rubbish

The typical response to his technology is that it was a “Perpetual Motion Machine” or utilized “Zero-Point Energy”. In reality, neither of these are correct by definition. Stanley, in many of his memos and conferences, meticulously explains every facet of his technology and the physics applied to it. Simply put, he used *known* electric circuit technology and *known* functions of such. He was not creating “free energy”; he was merely releasing the stored energy contained in water. H2O *is* the energy source, much like oil is the energy source of gasoline. You can’t put oil into your gas tank… which raises the question: How much energy is needed to discover oil, drill, pump, transport, crack (refine), and ship it yet again to its final destination? Then gasoline is utilized at less than 50% of its efficiency. It literally sounds insane when explained like this.

Application of the Technology

Water Purification (produces absolutely pure H2O)

Clean Energy Generation (produces heat / explosive energy without carbon)

Water Mineral and Contaminate Extraction (potential for filtration and utilization)

Research and Development

Many independent inventors have tried to replicate his technology, but no one has yet to step forward and display a *working* prototype of his specific processes… until now. For the past 15 years, I have been researching and testing various configurations of the WFC and VIC. I have been successful in demonstrating the Electrical Polarization Process by way of

voltage disassociation of the water molecule, without the use of chemical additives. This, in part, proves that the EPP that I am re-creating is not DCE.

Technology Re-created and Results Produced

VIC

Throughout my research and development, hundreds of various configurations have been tested. Development of this technology has led me to the present configuration, which shows much promise in the future of the WFC. The VIC is widely misunderstood, as many do not understand the underlying principle of Equal Opposite Polarity (EOP) pulses. The VIC that I have developed (discovered) produces impressive amounts of HHO gas by the use of EOP (electrical stress) delivered to the water molecule.

WFC

The WFC is a general term to describe the entire apparatus including the PSU, PWM, VIC, and Cells. However, the WFC can also specifically pertain to the stainless-steel tubes submerged in natural water (Cells). The Cells that I utilize in my WFC are a bit different than what Stanley Meyer's specifies, however. Given they are essentially the same design and provide the same function, I have found that slightly smaller tubes provide the best results for my specific application.

Quenching Disc

The Quenching Disc is a ceramic plate with tiny (near microscopic) holes. The size of the holes are so small, they prevent the recombining of the water molecule (combustion) past the disc. This is key to safely utilizing HHO gas by preventing spark-back and effectively eliminating explosion risk. An inventor by the name of Ethan Crowder has manufactured these discs and tested them, further proving the legitimacy of Stanley's patents and his WFC technology.

Exhaust Gas Recirculation

Another discovery of Stanley Meyer's was the ability to control the burn-rate of HHO gas. Hydrogen burns much faster than gasoline or propane, for example. In order to properly utilize HHO gas in the application of existing engines or propane burners, the burn-rate must co-equal that of gasoline (or appropriate gas source, such as propane). To do this, Stanley discovered that non-combustible (exhaust) gasses can be recycled into the HHO gas mixture to effectively reduce the burn-rate to co-equal that of gasoline, propane, or any other gas fuel source. With this important discovery, no modification to existing engines and infrastructure are necessary to utilize HHO gas as a replacement fuel source. This technology is responsible for rendering hydrogen safer than natural gas.

How The EPP Works

Power Input

There are 2 power supplies (PSUs) in my apparatus. The primary PSU is a variable 30 Volt DC Power Supply. It is important to note that both PSUs utilized are linear-mode devices. Switching-mode PSUs do not work, as the power output of switching power supplies are not that of a linear power supply (I did a video explaining this, see episode SR24). The variable DC PSU provides power to the Mosfet, which in turn provides power to the Primary Coil of the VIC. Total power consumption of the VIC / WFC is measured at this location, with a maximum availability of 300W.

The secondary PSU is a simple low-amperage 12 Volt DC power supply that provides power exclusively to the PWM (and cooling fans / controls, if applicable). The PWM, controls, and fans draw minimal amperage (less than 200mA) so for the sake of simplicity, its power consumption will not be factored into any measurements.

PWM

The Pulse Width Modulator is a typical signal generator that provides positive-pulse square-waves to the Mosfet. The PWM is a simple, widely-available signal generator that provides a continuous waveform from 1Hz to 20KHz.. Note that in my particular setup, there is no pulse "gate" as seen in Stanley's apparatus. Resonance in my apparatus is typically achieved at a frequency between 500Hz and 5KHz.

Mosfet

The Mosfet is a typical circuit component that allows a low-power signal (12V square-wave from the PWM) to amplify to a +30V signal. The 12V PWM signal is effectively amplified up to 30V by means of the variable DC power supply.

VIC

The Voltage Intensifier Circuit is a glorified transformer. In my particular setup, a standard toroidal step-down transformer is connected in reverse to create a step-up transformer. I discovered that a specific readily-available Power Transformer (Triad Magnetics VP48-10400) works amazingly well for my application. It is important to note, however, that additional windings are suggested (more so required) to balance the waveforms delivered to the WFC. This was previously explained in episodes SR114, SR115, and SR116 on my YouTube channel. It is further explained herein. The VIC provides multiple functions for the WFC operation as described below:

Circuit Isolation

The PWM's input signal is connected solely to the VIC's Primary coil. The Secondary coil, diode, Inductors (chokes), and Cell tubes are electrically isolated, meaning there is no connection to ground or any other part of the overall circuit. The Cells essentially operate on an "open" or "floating" ground that has no direct connection to any other part of the circuit. This is one key function of the apparatus to reduce amperage consumption.

Transformer Action

The VIC inherently operates as a step-up transformer. It takes the (low voltage) <30V input square-wave signal and amplifies it to hundreds or thousands of volts while maintaining a similar unipolar pulse signal..

Resonant Condition

The transformer's Inductors connected in series to the Cells set up an LC resonant condition. LC or LCR "tank" circuits are well-known in the electronics industry and have been utilized for decades, namely in audio and radio technologies. The values of the Inductors and capacitors determine the frequency at which the circuit (VIC) will resonate at. Upon reaching resonance, the voltage is maximized at the Cells.

Amp Restriction

The overall goal of the VIC is to amplify voltage and reduce amperage consumption as much as possible. As amperage is reduced, voltage is then able to be raised. Amp restriction is paramount to the WFC and as new ways are discovered to reduce amperage at the Cells (the circuit's resistive load), higher voltage levels can then be achieved.

Inductors (balancing)

The VIC's isolated circuit is comprised of a Secondary coil and 2 Inductors. Depending on how you 'view' the VIC's layout, there is a series Inductor on each side of the Cells (positive and negative terminals). These Inductor values must be balanced to provide EOP to the Cells. Without EOP, available voltage and gas production are hindered. One of the Inductors is essentially part of the Secondary's coil, as it wound in a bifilar center-tap mode (as explained in episode SR104).

EOP

Equal Opposite Polarity pulses are widely misunderstood in the WFC community. Many inventors have pushed thousands of volts into their Cells, producing barely any bubbles (HHO gas). The problem here is simply that they are not delivering proper waveform to their Cells. EOP is paramount to HHO gas production. Without EOP, there is no voltage potential across the Cells and therefore there is no EPP. This is the biggest thing that is holding other inventors back from achieving any substantial gas production from their Water Fuel Cells.

WFC

As aforementioned, the WFC is a general term for the entire apparatus, but specifically can reference the tubes, plates or "Cells" of the device. In my particular setup, a single 5/16-inch stainless steel tube is placed inside a slightly larger 1/2-inch tube, so that they are concentric. The gap between these tubes is very important. The outer 1/2-inch tube has a wall thickness of 0.065" wall, having an ID of 0.037". This leaves a tiny gap of approximately 1-2mm between the concentric tubes. This gap should be the only part of the tubes exposed to the water bath. Any other exposed metal reduces efficiency and exacerbates the "dead-short" condition. The Cells facilitate multiple functions of the WFC as described below:

A Water Capacitor

In the WFC, the concentric tubes submerged in water create a type of water-capacitor, exhibiting a similar function to a standard electrolytic, ceramic, or film capacitor. This water-capacitor can store a charge just like any other capacitor.

LCR Circuit

In a typical resonant LC or LCR circuit, there is an Inductor (in this case, as part of the VIC transformer), and a capacitor (in this case, the aforementioned water-capacitor). This simple circuit allows energy to be exchanged between the two components at a given frequency. At this resonant frequency, voltage is increased to its maximum potential. This voltage "pressure" performs the work of separating the water molecule into its component parts hydrogen and oxygen.

Waveguide

Waveguides are simple tubes or chambers that direct the transmission of electromagnetic energy. In the application of the WFC, the Cell tubes act as waveguides that direct and propagate the electromagnetic energy throughout the entire tube.

Electrical Stress

The water molecule is a dipole molecule. This means that it has a positive potential on one side of the molecule and negative potential on the other. Much like a standard microwave oven utilizes electrical stress (voltage potential) to move and oscillate the water molecule (causing molecular friction, therefore heating the water contained within your food), the EPP utilizes electrical stress (voltage potential) to break apart the water molecule. This is achieved by simultaneously producing both positive and negative electrical stress (voltage potential) within the waveguides (Cell tubes). When the inner-tube is energized with negative voltage potential, the outer-tube is simultaneously energized with positive voltage

potential. This equal and opposite polarity (EOP) potential creates tremendous stress on the dipole water molecule. This EOP electrical stress within the waveguide causes the outer-most covalently-bonded electrons of the water molecule to elongate, disrupting their nominal orbit. As the electrons' orbits elongate, the covalent bond of the water molecule is weakened and eventually broken entirely. The result is two independent hydrogen atoms and one independent oxygen atom. The now liberated hydrogen and oxygen atoms are at a "net zero" energy level (neither positive or negatively charged), as the dipole condition is no longer present.

Voltage Performs Work

Voltage potential is the means of work applied to water molecules. Voltage performs work—this is well known in the electronics industry. Voltage potential is electrical stress that the water molecule is subjected to within the waveguides. The more opposite voltage potential available at the Cells, the greater the electrical stress subjected to the water molecules. Simply put, more voltage equates to more molecular disassociation.

Future Technology

The potential of the WFC technology is boundless. At this present basic level of understanding and operability, the fundamentals are clear. Stanley Meyer's EPP and WFC technology poses a tremendous opportunity for future breakthroughs as the process is further examined, understood, and developed.

Efficiency

At my present level of understanding, as previously mentioned, EPP is *less* efficient than DCE. However, what I have established here is a foundation of operability. From this point, efficiency is expected to be increased well beyond its present state. With the help of those knowledgeable in the appropriate fields, this technology can be improved, modified and adapted to achieve incredible results. Here I have established a baseline, a cornerstone of this technology; and it may be up to *you* to take this to the next level.

Next-Level Technology

The EPP is the first step in Stanley Meyer's technology. With this fundamental architecture now proven, further exploration of Stans patents can now be examined with certainty and credibility. The proposed next steps will be experimentation in his Hydrogen Fracturing Technology (HFT), Electron Extraction (EE), and Electrical Particle Generator (EPG). Since Meyer's patents on the EPP are now proven, who is to say that his subsequent patents are also not feasible? In my informed opinion, no man would go through such extensive lengths just for it to be a scam—most certainly not to this level of discovery, documentation, and adaptation.

Stanley's spin-off technology tipped in other sectors such as ambient air reclamation, utilizing the same principal to instead clean the air of carbon emissions, oxides, and harmful gasses. This technology has yet to be investigated.

The Pursuit of Knowledge

Since the dawn of mankind, the pursuit of knowledge has never ceased. Throughout history, major discoveries have transformed society. Most notable were the discovery of fire, chemistry, electricity, radio, the transistor, and the Internet. Stanley Meyer's discovery of the EPP *will* be the next to add to that list. Now that the fundamentals of his technology can be firmly grasped, it will transform society once again.

“Curiosity kills boredom. Nothing can kill Curiosity”

Proposed Next Steps:

Safety

A level has now been reached to where additional safety measures must be accommodated for and put in place. Approaching gas levels of 1LPM will satisfy the requirements of our test scenarios, but handling this amount of gas must be done safely. This ideally requires a secured, segmented space where apparatus controls are at safe distance from the Water Fuel Cells and gas-consuming device (e.g. ICE). Hearing Protection must also be considered as hydrogen explosions can be more harmful to hearing than other functions of the body. Ideally, the control room would be sound-proofed to eliminate any hearing-loss risk.

Other safety measures must be in place for the use of high-voltage systems. Safety grounds and automatic-off relays must be utilized to prevent electrical accidents.

As experimentation in the HFT begins, special caution must be exhibited due to the massive amount of energy that the apparatus *could* release, in the realm of up to and beyond “2.5 million times that of oil”, per Stanley Meyer. HHO gas production, excitement, and utilization would need controlled at very precise levels to prevent unexpected results.

Gas Control Systems (GCS)

To appropriately utilize the generated gasses, ambient air as well as non-combustible exhaust gasses must be recycled (metered) into the HHO gas feed. This allows for the control of temperature, burn-rate, and appropriate engine RPM. For open-flame test scenarios, captured non-combustible fumes can be recycled back to the HHO gas mixture by utilizing a catalytic dome, to control flame temperature and burn-rate. These measures of control can be accomplished by remote-control variable gas valves and catalytic domes.

Feed to Internal Combustion Engine (ICE)

Ideally, due to the high-temperature flame generated by HHO gas, it would perhaps be best suited to power a Sterling-Engine or perhaps steam-energy generator. Realistically, the gas is to be utilized to power an ICE such as a small Gas-Powered Engine (e.g. generator). In order to do this, the aforementioned Gas Control Systems must be developed and adapted to the intended device.

Spherical Resonant Cavity (SRC)

The Spherical Resonant Cavity is a WFC design that may outperform all other Resonant Cavities (Cells). Typically, concentric-tube type Cells are utilized due to the low cost and ease of availability. The SRC is a specially-manufactured Cell that few have even had the opportunity to build or test. These Cells could provide a 3x to 19x improvement in gas production over other tubular-arrays.

Gas Resonant Cavity

The HHO gas released from water can be further energized to release more energy than conventional HHO gas. This “excitement” of the molecules is accomplished by “priming” the liberated, free-floating hydrogen and oxygen atoms, through the following processes:

Laser Injection

By exposing the HHO gas to positively charged photons (laser light), some atoms take on a positive charge. By positively charging the atoms, electrons are therefore made available to be extracted. *clarify

Electron Extraction

Through the use of the Electron Extraction Circuit (EEC), positively charged atoms can eject their orbiting electron. This circuit can dislodge and consume the electrons, producing ionized atoms. These ionized atoms are now at a higher energy state than normal. When combustion is attempted, there are not enough electrons available to complete the molecular bonds, therefore a tremendous amount of thermonuclear energy is released. *clarify

References

Stan's Revenge YouTube Channel:

https://www.youtube.com/channel/UCKCM8IELatzwDuURVuBDQzQ

Toroidal VIC Transformer:

Triad Magnetics VPT48-10400 Power Transformer

https://www.triadmagnetics.com/item/power-transformers/toroidal-mount-world-series-power-transformers/vpt48-10400

PWM:

Generic PWM Signal Generator

https://www.amazon.com/Generator-Frequency-Adjustable-Rectangular-XY%E2%80%91LPWM/dp/B09KM5TL93

https://www.amazon.com/dp/B0CX4PMP49/

Mosfet:

IRFP460 (best one found to date)

https://www.ama zon.com/dp/B0868RXZ4S

VIC Diode:

PRHVP2A-20 (*ORIGINAL*)

https://www.amazon.com/dp/B087PRYGRT

FR207 (*NEW*)

https://www.amazon.com/dp/B0CYGPSCG9

Cell Diodes:

UF4007 (Up to 1A operation only)

https://www.amazon.com/dp/B0CYGPSCG9

30V DC Rail / Snubber Diodes

20SQ050 Schottky Rectifier, 20A / 50V
*Used for VIC Positive / Negative Rail and Snubber

https://www.amazon.com/dp/B08KDGBFTV

Stainless Steel Seamless Cell Tubes:

5/16" OD inner-tubes, 0.035" wall, 0.2425" ID
* Polished OD gap-face

https://www.onlinemetals.com/en/buy/stainless-steel-round-tube-304?q=%3Asize%3AMaterial%3AStainless%2BSteel%3AShape%3ATube-Round%3AAlloy%3A304%3AProductionMethod%3ASeamless%3AWall%3A0.035%2522%3AInnerDiameter%3A0.2425%2522%3AOuterDiameter%3A0.3125%2522

https://tinyurl.com/y8wjxpd7

1/2" OD outer-tubes, 0.065" wall, 0.37" ID
* Polished ID gap-face

https://www.onlinemetals.com/en/buy/stainless-steel-round-tube-304?q=%3Asize%3AMaterial%3AStainless%2BSteel%3AShape%3ATube-Round%3AAlloy%3A304%3AWall%3A0.065%2522%3AInnerDiameter%3A0.37%2522%3AOuterDiameter%3A0.5%2522%3AProductionMethod%3ASeamless&checkbox=on&sort=size

https://tinyurl.com/33sddpsp

*All tube ends must not be burred for flared

Stainless Steel Strip:

4mm Dental Strip, gapped, fine
* The thicker the SS, the better (some products are flimsy)

https://www.amazon.com/dp/B072HQTV1L

Enameled Magnet Wire (Balancing Inductor)

22AWG, 0.0273" Diameter, Polyester Insulation / Polyamideimide Overcoat
* Other gauges may work, but are untested
* Most important factor is matching inductance of opposite polarity coil.

https://www.amazon.com/dp/B00L5IUFRE

Primary Power Supply (PSU)

Variable 30V, 20A Regulated
* Negative terminal manually binded to Ground for "linear" application

https://www.amazon.com/dp/B0924K3VQ5

Secondary Power Supply (for PWM / controls only)

12V, 1A Linear, Grounded Power Supply
* All 12V PSUs listed are untested, but should work
* Typically suited for DVR/NVR surveillance cameras
* Must provide "linear" 12V DC plus 0V "Ground" (see Stan's Revenge Episode SR24)

https://www.amazon.com/ALITOVE-100-240V-Converter-Transformer-5-5x2-1mm/dp/B07MXXXBV8

https://www.amazon.com/Supply-Adapter-100-240V-50-60Hz-Connector/dp/B0BJVVBBMJ

Hydrogen Flashback Arrestors

K-Musculo Oxy-Hydrogen Flashback Arrestor w/Check Valve 1/4" Barb
* Must be in place at *each* Cell and just before gas-output endpoint.

https://www.amazon.com/dp/B08L5JBXKN

PART 2 – Apparatus Details

Verbiage

- Terminal – Connection of *specified* Component (there are many referenced)
- Snubber – Additional circuit that absorbs spikes, transients, and noise (connected to Mosfet)
- On-Time – Period of time when the PWM is delivering a square wave pulse to the Mosfet / VIC
- Off-Time – Period of time when the PWM is OFF, with no power being delivered to the Mos / VIC

Layout

The complete WFC circuit can be categorized into the following:

1. **Power Supply(s) – 30V Primary and 12V Controls**
2. Relays – Only used for Primary Coil Polarity Reversal and Safety-Off. Not required for operation.
3. **PWM / Signal Generator – Square Wave Signal Generation**
4. **Driver / Snubber – Circuit and Feedback Loop for Transformer Primary Coil**
5. **Transformer / VIC – Responsible for Power Amplification and Waveform Balancing**
6. **Cells – Stainless Steel Tubes**

*In my apparatus you will see Relays. These relays are for circuit experimentation and are not required for operation. They can be disregarded.

30V Variable PSU

The 30V PSU delivers power exclusively to the Mosfet and Primary Coil. It is the primary power source for the VIC circuit and EPP. The Positive Terminal of this PSU is connected directly to the Primary Coil of the VIC Transformer, separated only by a Polarity Relay [not required for operation] and Diode (Current respective).

The Negative terminal of this PSU is bonded to the 0v Earth Ground Connection of the PSU. This bonded Negative Terminal connects to the “S” Terminal on the Mosfet, separated only by a Diode with current respective.

Snubber

The snubber is a simple series resistor, capacitor, and diode, which is connected in parallel with the transformer’s Primary coil. The snubber’s primary function is to reduce transients, noise, and spike-backs on the 30V positive rail. This effectively eliminates damage to Mosfets and other driver components.

The 30V PSU Positive Terminal also connects to the Snubber, by way of reverse-polarity 50V / 20A Schottky Rectifier Diode (20SQ050), connected to a 474nF 63V (0.47 K.630.47 K.63) Polycarbonate Capacitor, connected in series to a 10R 100W (wire wound) Resistor. The Snubber Resistor then connects to the “D” Terminal on the Mosfet, shared with a connection to the VIC Primary Coil’s Negative Terminal. The VIC Negative Terminal is connected only to the Mosfet “D” Terminal and Snubber Resistor. This terminal may be separated by the VIC Primary Polarity Relay, but it is not shown or required herein. Please note that these are likely not mathematically optimal Snubber values, but they prevent Mosfet damage fairly effectively. You may need to modify these values to obtain optimal operation. The type of aforementioned Diode is used wherever a Diode is necessary on the 30V DC “Driver” rail such as input, output, snubber, etc..

12V PSU

The 12V PSU delivers power exclusively to the PWM signal generator. The PWM signal generator consumes minimal amperage [less than 30mA, per manufacturer], and the 12V PSU is not connected to any other part of the VIC.

PWM

The PWM delivers a continuous "square wave" signal directly to the Mosfet. The PWM consumes a negligible amount of energy [~30mA], as the Mosfet is responsible for delivering up to 30V / 10A from the Variable 30V DC PSU. The PWM has a "VIN+" and "VIN-" that connects directly to the 12V PSU. The PWM also has a "PWM" output which connects directly to the "G" Terminal on the Mosfet.

Mosfet

The Mosfet in my apparatus is mounted to an aluminum computer processor heatsink. This is accomplished by drilling a small hole to accommodate a screw or bolt that can secure the Mosfet to the heatsink. A thin layer of thermal paste is utilized for efficient heat transfer. The Mosfet cooling fan (CPU cooler) is also connected to the 12V PSU and consumes minimal amperage. If you are really concerned with tracking amperage, add ~170mA to your equations [for LGA1156 type stock coolers].

As previously mentioned, the Mosfet Terminal Connections are as follows:

- G Output of Signal Generator "PWM"
- D Snubber [Resistor], ***and*** Negative Terminal of the VIC Primary Coil
- S Negative Terminal of 30V PSU (with respective diode)

Transformer / VIC

The specific transformer I utilize has 8 total leads. The standard step-down transformer is connected in reverse (rather, inversed) to create a step-up transformer. This means we use the Secondary Coils as the Primary, and the Primary Coils as the Secondary. Each respective coil has 4 leads and each should be connected in a bifilar-mode (center-tap, open ground), so that the Primary Coil is bifilar mode and the Secondary Coil is also bifilar mode.

VIC Diode Location & Orientation

This is very important to note. This is in relation to the "VIC Diode" contained within Stanley Meyer's VIC schematics. The specific diode location and polarity orientation *can* be modified for different operational modes and generated waveforms. In my specific application the colored wires are connected as follows:

- Yellow / Black – Primary Coil Positive / Negative Input (from PSU / Mosfet)
- Orange to Red – Primary Bifilar Center Tap (connected together)
- Blue – To VIC Diode (Polarity Respective)
- Purple to Grey – Secondary Bifilar Center Tap (connected together)
- Brown – To Cell Negative Terminal (plus Cell Diode, if applicable)
- VIC Diode – To Inductor A (Balancing Inductor)
- Balancing Inductor – To Cell Positive Terminal (plus Cell Diode, if applicable)

*Multiple modes of operation are possible. If waveforms observed at the Cell Terminals are not appropriate (EOP), experiment with different VIC Diode locations (Secondary's Positive Vs. Negative

Terminal), Diode polarity orientation (reverse Pos / Neg), and Balancing Inductor(s) polarity orientation (reverse Pos / Neg).

Balanced Inductor(s)

The transformer in my apparatus is wound with an additional coil herein called the Balancing Inductor. The function is to match the inductance of **one** the Secondary Coils. The inductance of this Balancing Inductor should match a single Secondary Coil. The inductance to match to would effectively be measured from the Secondary's Negative Terminal to the Secondary's bifilar Center Tap. **The Secondary's bifilar Center Tap is essentially the "Electrical Ground (61) (J)", as seen in Stan's VIC schematics**. Again, the custom-wound Balancing Inductor, wrapped on top of entire toroidal transformer should measure the same inductance of the referenced single Secondary Coil above. This Balancing Inductor is connected in series to the Secondary's Positive Terminal, just after the VIC Diode.

The VIC Diode acts as a wall. Inductance values in front of this Diode are null, therefore the Balancing Inductor must be on the Terminal that hosts the VIC Diode, so that the opposite Coil's Inductance is matched to the Balancing Inductor.

When operating the apparatus, by observing the oscilloscope CH3 and CH4, you can make imperial observations about which terminal has more inductance. Then you can remove individual winds accordingly to achieve balanced EOP at the Cells. In the WFC Operation section below, you will understand how to perfectly balance the inductance within the VIC. Inductor windings will likely need to be removed to perfectly balance the waveform.

Series Cells

In my apparatus, a single "Cell" (as referenced), generally contains 6 individual Cells (12 concentric positive/negative tubes, respectively). This "Cell" verbiage typically represents a "6x1 Cell". As part of my apparatus, additional Cells can be serially connected. In my application, up to 6x6 Cells or 32 individual Cells have been tested. Additional Cells over 32 may provide diminishing performance. "Cell Terminals" are defined as the first Positive Terminal input, and the last series Negative Terminal output (first in / last out).

Oscilloscope

In my present apparatus, there are 4 points of observation for oscilloscope waveforms. The Channels are as follows:

1. CH1 (yellow) is the PWM signal generator's output being delivered to the Mosfet. This shows the physical square wave signal that is being input to the Mosfet.
2. CH2 (red) is the variable 30V DC positive rail. This is simply for monitoring the DC rail for spike-backs, transients, and harmful noise from the VIC's operation (good for snubber tweaking).
3. CH3 (blue) is the Positive Terminal of the series Cells (first in). This is for monitoring the Cell's Positive Pulse; to effectively realize and utilize EOP.
4. CH4 (green) is the Negative Terminal of the series Cells (last out). This is for monitoring the Cell's Negative Pulse, to effectively realize and utilize EOP.

*Note that all oscilloscope channels do not have a probe reference ground. Floating ground utilized for all readings.
*CH3 and CH4 probes are set to 10X reduction.
*CH3 and CH4 are centered on the oscilloscope display so that EOP can be effectively displayed and realized.

Voltmeter

The voltmeter is connected to the Cell's Positive and Negative terminals, in the same location as the oscilloscope's CH3 and CH4, respectively (first in / last out). This provides a value of the difference in Voltage-Potential across the entire span of Cells.

Amp Meter

The amp meter is connected in series to the Cell's Positive Terminal only (first in). This provides a value of Amperage being consumed at the Cells. Normal operating ranges in my apparatus are 200mA to 1A, with some specific modes (extreme operation) consuming up to 2A.

Cell Diodes

High-Voltage, Fast-Recovery Diodes have been observed as aiding EOP in certain circuit configurations. Typically speaking, when these diodes are placed at the Cell's Positive and Negative Terminals (first in / last out) with current respective, reverse polarity spikes are reduced during the Pulse Off-Time. This can help produce better looking EOP waveforms and retain more polarity difference in the Cells during Off-Time.

WFC Operation

Control Overview

The overall goal of WFC operation is obviously to get the highest gas production possible. To achieve this, voltage potential must be maximized by "tuning in" to the (LC) circuit's resonant frequency. Finding this frequency is fairly easy. Start the PWM with 50% Duty Cycle and a frequency of 500Hz. Make sure your Primary Variable PSU is set to 0 Volts every time you power on.

Begin by powering on the apparatus and increasing the Primary PSU voltage to approximately 12 or 15 volts. You may notice a small amount gas production in the Cells. If you do, you're off to a great start. Observe your oscilloscope, paying close attention to CH3 and CH4. Look for increasing polarity differences and opposing pulses. At low voltage or out-of-resonant frequency, the waveform may not be true EOP yet. True EOP is sometimes not fully realized until you achieve higher voltage levels at the Cell. If you are not getting defined polarity difference of 3V per tube (multiply 3V by number of tubes), check your VIC connections, as you may need to modify connecting it in a different polarity / mode / configuration. With my apparatus, you should be able to achieve voltages up to 5V per tube (multiply by number of total Cells).

If you see some gas production and opposite polarity pulses on the oscilloscope (and the multimeter reads appropriate corresponding voltage across the Cells), try increasing the frequency to determine if the Cell voltage rises. If the Cell voltage diminishes, decrease the frequency until a maximum voltage is reached. Once you find this resonant frequency, you can then increase the voltage on the Variable DC PSU to achieve a moderate gas yield. In addition, you can increase the PWM's Pulse Duty Cycle up to 85% (max recommended), for maximum gas production. Be aware that this will consume many more input amps, typically up to 6A or 7A. Increasing Duty Cycle will also increase current flow in your cells. **Adjusting frequency or Increasing Duty Cycle while operating at high-or-maximum input voltage may damage your driver. It is recommend that all tuning be done at moderate voltage levels.**

Under present operating conditions, amperage at the Cell is typical at approximately 1A and can even be as high as 2A in specific extreme operating conditions. Remember, the key is to keep amperage minimized and voltage maximized. Your specific VIC may operate with different parameters than my apparatus, so be curious and determine your own optimal conditions.

Before modifying any part of your VIC or touching any connection, verify that all power is turned off and that the Cells have been grounded (shorted). Stored energy in the Cells (Water Capacitors) can be discharged throughout any part of the circuit. Be careful! For safety, I incorporate a set of relays that automatically short the VIC and Cells to discharge all energy when the power it turned off. These “Safety Relays” can be referenced in my “HVIC Matrix Switchboard” videos on my YouTube channel.

Observing Waveform and Achieving EOP

Begin by finding your resonant frequency as prescribed above and maximizing your Duty Pulse and Input Voltage. This should realize and observe maximum voltage potential on your oscilloscope. Upon initial operation, your observed CH3 and CH4 waveforms will not be Equally Opposite. To fine-tune your VIC circuit, observe the blue waveform in relation to the green waveform (CH3 / CH4). Observe and make note of how many vertical ‘grid blocks’ (volts) the blue waveform is achieving, for example 4.0 grid blocks. Now observe and make note of how many vertical grid blocks the green waveform is achieving, for example 3.5 grid blocks. Since both waveforms should be she same voltage (take up the same number of vertical grid blocks), we clearly have a polarity imbalance. The key is to remove windings from the coil that is providing more blocks / voltage OR add windings to the opposite coil (providing the smaller waveform). Ideally it’s easiest to unwind some of your Balancing Inductor, instead of adding more windings to your Secondary’s Negative Coil (Inductor B). When you unwind / remove individual coils of wire, do so just a few winds at a time so that you don’t remove too much. With some trial and error, you should be able to accomplish true EOP, maximize voltage potential, and minimize amperage at the Cell.

Water Fuel Cell Management

You will notice after some use of the WFC, the water will become dirty and discolored. Contaminates are “pulled” from the water during the EPP. Since only HHO and ambient gasses are leaving the Cells, the water bath collects particulates and minerals released from the water. Once this water is saturated, performance of the Water Fuel Cell is likely to be affected. Utilizing larger water-baths or chambers would reduce the rate of water saturation. Ultimately, the individual Cell (or group of Cells) would need to be shut down, drained, rinsed, and filled again with natural water. A process that could be later automated.

Values, Calculations, and Results

Values

Here are the disclosed values for all the components of my apparatus:

Snubber:

(printed values)

- VIC Diode: FR207 Cell Diodes: UF4007
- Capacitor: 474nF 63V 0.47 K.63
- Resistor: 100W 2R Wire Wound

VIC Transformer:

(values measured at 1kHz)

- Primary Single
  - L 700-785uH
  - C 32uF
  - R 12R
- Primary BiFi
  - L 880uH – 980uH
  - C 25.75uF
  - R 26R
- Secondary Single
  - L 330mH – 336mH
  - C 76.2nF – 77nF
  - R 459R
- Secondary BiFi
  - L 1.18H
  - C 21.7nF
  - R 805R
- Balancing Inductor
  - L 250 – 270mH
  - C 102.7nF
  - R 513R

*Additional winds were added to the Secondary's Negative Terminal to "fine tune" the system

Water Capacitors:

(values measured at 1kHz)

- Individual 6x1 Cell ***see "Measuring Cell Values" YT videos**
  - L
  - C
  - R
- Span of 24 Cells (6x4)
  - L 151H
  - C 166pF
  - R 37M R

Calculations:

PSU Input Power Consumption:

Typical Amperage values under normal 29V test scenarios vary between 4A and 6A.

*For Demo Video, Maximum value of 32V is utilized.

DEMO VIDEO:

Input Voltage: 32.05

Input Amperage: 7.23

Input Watts: 231.72

Cell Power Utilization:

Typical Input Amperage values under normal test scenarios vary between 200mA and 2A.

DEMO VIDEO (SR120)	**TEST1:**	**TEST2:**	**TEST3:**
• Average Input Voltage:	32.06	31.99	32.06
• Average Input Amperage:	7.23	7.25	7.29
• Average Input Watts:	231.72	231.92	233.71
• Watts Per Liter (X MPL):	758.18	735.18	740.86

HHO Gas Production TEST 1

Measurements at Cell 118.7 Volts 1.21 Amps

1. 0.5mL Bottle **T**ime **T**o **F**ull: 1:38 seconds
2. TTF x 2 = 3:16 **M**inutes **P**er **L**iter = MPL Decimal Multiplier: 3.27
3. A x MPL = 4.6 **A**mps **P**er **L**iter
4. A x V x MPL = 546.02 Watts Per Liter
5. Input Watts = 732.23 Input Power Per Liter

HHO Gas Production TEST 2

Measurements at Cell: 118.0 Volts 1.12 Amps

1. 0.5mL Bottle **T**ime **T**o **F**ull: 1:35 seconds
2. TTF x 2 = 3:10 **M**inutes **P**er **L**iter = MPL Decimal Multiplier: 3.17
3. A x MPL = 3.55 **A**mps **P**er **L**iter
4. A x V x MPL = 418.9 Watts Per Liter
5. Input Watts = 735.18 Input Power Per Liter

HHO Gas Production TEST 3

Measurements at Cell: 117.8 Volts 1.12 Amps

1. 0.5mL Bottle **T**ime **T**o **F**ull: 1:35 seconds
2. TTF x 2 = 3:10 **M**inutes **P**er **L**iter = MPL Decimal Multiplier: 3.17
3. A x MPL = 3.55 **A**mps **P**er **L**iter
4. A x V x MPL = 418.19 Watts Per Liter
5. Input Watts = 740.86 Input Power Per Liter

Conclusion:

The EPP is a powerful, widely misunderstood phenomenon. As observed and recorded herein, my apparatus can produce nearly 1/3 LPM of HHO with just 1.12 Amps, when utilizing Voltage Potential as the means of molecular separation. Even though more than 400 Watts is consumed (input power), at the Cells the measured *amperage* is insufficient to create the amount of gas observed. The amperage is just a *fraction* of what present-day Faraday's DC Electrolysis requires. This suggests (proves) that Voltage is performing the work, just as Stanley Meyer's patents, memos, and seminars profess.

With just 1.1 Amps measured at the Cells, it is clear that the applied Voltage Potential of 118 Volts (extrapolated to just 4.81 Volts per individual pair of concentric Tubes), delivered by means of the VIC as Equal Opposite Polarity pulses, *is* the driving force in this physical process.

Scaled to 3x its present size, my apparatus would produce nearly 1LPM utilizing a total of only 3.5 Amps! In this scenario, each apparatus would be identical, delivering 118V to each series of (24 total) Cells at 1.12 Amps. However, the total Input Power consumption would be approximately 740W.

Final Words:

With further exploration, experimentation, and application of Stanley Meyer's revolutionary technologies, a new future of clean energy and clean water can be realized. The fundamentals of the Electrical Polarization Process are now understood, are applied to my apparatus, and have been verified in my publications. With these fundamentals now proven and as even greater WFC efficiency is attained, this technology can be taken seriously by all, to finally propel it to its destiny as one of the greatest technological discoveries of mankind. If these fascinating results can be accomplished with the limited resources, knowledge, expertise, and funding that I alone possess; there is no telling what this technology in the right hands would be capable of.

With all of my love,

-Noah D Auman

Aka. Stan's Revenge

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