

Panacea-BOCAF On-Line University

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Research Paper on Ravi's Water Fuel cell Replication



Quote - "I'm not here to argue whether things work as per the preset laws of physics or thermodynamics but you need to keep an open mind to evolve and see if something actually works I'm an engineer and been taught that things don't work if you break the laws. Well I know my laws thank you. I've been making cells for the last 8 years but now I've got something that works. If people want to replicate it they can I'm giving out info on how to do it if they don't want to fine by me! I'm getting nothing nor losing any thing by this. Stan wanted to sell his units! well I'm not! this is for the people who are already trying it out and who want to....."

its time we did something about the environmental mess the world is in, its accelerating by the year and it wouldn't be long before that the powers be would realize that most of these changes are irreversible .Vanishing Glaciers, melting polar caps, Europe has seen the hottest summers in living memory and now Asia is going through the worst floods in the living memory. We are heading for a disaster and have already reached a point of no return with the fossil fuel addiction. Its time we make ourselves count by

helping others to make this technology feasible and easy to replicate whatever small contribution no matter how much ever small to improve the air we breathe would go a long way for our children's future.

We need people to know this side of science before its too late look at the change in the environment in the last 100 years in the garb of development were ruining the world we live in for the future generations and we are shown a picture of development as prosperity actual fact being more the prosperity more we ruin the environment for our creature comforts its a vicious cycle we could introduce the alternate science at places where its hurting the environment the most at least in a small way. End quote- Ravi

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Overview

The following research paper is the first document in a sequence of material which will be used to create a complete course on pulsed DC resonant systems. This course will be coming to the Panacea University site soon. This research paper mean time intends only to out line the **specific replication criterion which is necessary to duplicate Ravi's water fuel cell results**. All related faculty information, validation data and further details of the water fracture process will be included in the complete course material expected to be ready in late 2008.

Ravi Raju is a registered open source engineer with Panacea and has recently disclosed his WFC replication success. Ravi's version is based on the old (now upgraded) Panacea university "D14" plans. These plans originated from the disclosures and device of open source engineer Dave Lawton.

Dave Lawton's success in constructing a working **VERSION** of the Meyer WFC was reported to produce gas at 3x the Faradic equivalent rate for the power consumed. Dave, who spent much of his career at Britain's Rutherford Labs (equiv. U.S. Lawrence

Livermore) designing and constructing instrumentation for high energy particle physics research, is far from the average 'tinkerer'.



Dave Lawton's original WFC (Water Fuel cell)

Videos of his two WFC units, one with an [alternator based circuit](#), and one [employing solid state timing logic](#), was posted on YouTube and has since received over 50,000 hits. The cells operated at 12-13v/3-4a - averaging approximately 57 watts of input power - producing gas aggressively in distilled water with no added electrolyte.

The difference between Ravi's replication results and Dave's is that Ravi built a bigger cell and conducted a gas flow meter test. This gas flow meter test proved without any doubt that he had some thing closely related to Meyer's original process. Meyer's results reportedly showed an out put which was up to 1700% above Faradays law of electrolysis. Thus it is only logical to assume that the pulsed DC resonant systems are not conventional electrolysis.

Nothing about this process involved in the Water Fuel Cell resembles electrolysis. There is no electrolyte used; there is NO current admitted to the water, in a proper system. No heating occurs in the water as it produces gas. The gas produced is Hydroxy (aka HHO or "Brown's Gas"), not differentiated Hydrogen & Oxygen; and all of the work is performed by voltage potential alone.

As a result of Ravi disclosing his gas flow test on you tube, intimidation intended to interfere with his research resulted. Ravi was [un lawfully threatened](#). This prompted public action by the non profit organization and a reporting of this incident to the authorities by us. Currently our subscribers keep a public watch on Ravi's and the organizations actions. The public are needed to assist in this task to stop energy

suppression, please [subscribe to our news letter](#). **Only consolidated in this task can we effectively prevent engineers from being harassed and enable them to freely present free energy research to the public.**

The Non profit organization Panacea-BOCAF intends to support open source engineers working with the WFC and other suppressed clean energy technologies. These engineers require grants, resources, faculty recognition and security. All this can be created in [Panacea's proposed granted research and development center](#). For those able to help this effort, please [Contact us](#).

Ravi's version of "D14" used bigger 9" (inch) tubes and a 9 tube set. This gave him a resulting lower input current of 0.51 Amps from the frequency generator. Given the efficiency reports by Ravi this technology is an invaluable power management process which the mainstream faculties must benefit from. **As an emission cutting device and power savings device alone, this technology justifies (and needs) law for its mandatory implementation.**

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[Panacea's page on Meyer's technology](#)

Description

Until further OPEN SOURCE testing can be done, so far it is understood that there is compound resonance present in the WFC (actually it is more of an electrolyzer than a fuel cell). This compound resonance has so far been evident in experimenter's cells. There is an electrical resonance between the inductors (Resonant Charging Choke coils), there is an electrical resonance within the electrode gap itself within the water, and, finally, there is an acoustical resonance between the cylindrical electrodes, which is somehow phase coupled to the electrical resonances.

The electrical resonance involves a phase delay between the pulses to the electrodes, which has the effect of inhibiting current flow into the cell; the acoustic resonance may be producing a standing wave which inhibits ion transport. Both of these contribute to dielectric breakdown in the water, which is where electrons are ripped from the water (by voltage alone) and as a result producing monatomic (brown's gas) hydrogen in the process.

This concept and technology first surfaced in the 1990's, individuals such Dr. Henry Puharich showed that by molecular resonance the production of this gas are possible,

as did Dr Yull Brown hence the name Brown's gas. The reality of the hydrogen on demand process became self evident with the emergence of the Stanley Meyer's water fuel cell patent, which showed that conventional electrolysis theory is incomplete and not the whole picture as Stanley Meyer was able to create enough hydrogen out of the water to run a car from as little as 13 volts and very little amperage. Stan's efficiency's were calculated to be up to 1700%.

Today this **pulsed resonant DC** hydrogen on demand process is still currently unknown and thought to be impossible by the mainstream faculties. What mainstream faculties must realize is that there is not one part of 'Water Fuel Cell' operation which resembles conventional electrolysis. Therefore the out puts are not expected to resemble faraday's equations in any way.

1) There is no electrolyte; 2) There is NO current admitted to the water, in a proper system; 3) No heating occurs in the water as it produces gas; 4) The gas produced is Hydroxy (aka HHO or "Brown's Gas"), not differentiated Hydrogen & Oxygen; and 5) All of the work is performed by voltage potential alone.

If you think how an opera singer is able to split glass with her voice, by the pitch and freq of sound waves, this is resonant with the glass and either splits, fractures or cracks the glass. The simple way to explain what Stan Meyer is able to do is he is using electric frequency instead of sound to split the water from resonance created in the water by circuitry and steal cylinders. It is understood that Stan harnessed the voltage potential. There is still allot mainstream science doesn't not yet have in their curricula regarding voltage or electricity. For example [Tesla's Longitudinal and transverse waves](#).

Technically it is thought the gas results from an electromagnetic deformation of the ionized water molecule to Hydroxy (HHO), in which the Hydrogen atoms are bound magnetically, at less than the 1050 separation classically attributed to H₂O. This results in a stronger magnetic polarization of the molecule, whereby it also carries an additional electrical charge, and is recovered upon combustion.

The complete preciseness of the physical mechanism involved is still not completely agreed upon today, however the technology works. You can see this in certain industrial welding equipment that use the unique properties of Brown's Gas. This has been commercially available for over 25 years, removing all doubt as to its existence.

When the water fuel cell technology emerged In the '90s, it was assumed by the energy suppressors, one would suppose, that by murdering Yull Brown that Brown's Gas would disappear as a technical concept; or that with killing Stan Meyer and Puharich, the WFC would 'dry up and blow away' They certainly believed that if all THREE! Were out of the picture; the water fuel issue would sink beneath the waves.

There is no regulation at the federal level committing grants and security into harboring the manufacture of this suppressed alternative energy technology. The current mandated laws do not prevent a corporate cartel based influence from making or creating difficult economical or political conditions to suppress this environmentally sound technology and further harbor their own profit motives. They can also simply buy the patent off the inventor and shelve it, there is no law preventing them from this.

Despite there currently being no regulation and or social reforms into these matters, and these murders the water fuel cell issue is very much alive and being preserved today more then ever, this has only been able to be done with the aid of open sources engineers, whom are part of a non profit organization called Panacea-BOCAF. These engineers have independently successfully replicated a version of the Meyers water fuel cell from his patent and disclosed their results and instructions open sourced on the organizations on Line University.

Why open sourced? Well, one can judge by history why this is the only way. Examples can be seen in water fuel cell technology done by an individual named Steve Ryan's who operates the Bios fuel corporation, Steve presented a water powered motorcycle In late 2005, there was a segment aired on the show "60 Minutes" in New Zealand. This process may have used some sort of catalytic process to turn the water into a usable fuel. When the non profit organization recently asked Steve what happened to his technology, he replied and I quote due to the current economic and political conditions we are unable to bring you the water fuel cell technology at this time. He now only sells a 50/50 mix of water and fuel.

Energy suppression does exist today, Stanley Meyer is thought to have died of UN known food poisoning, other engineers with technology have been removed also. Also recently the Xogen and black light power cooperation both had working water fuel cell technologies, plus 4 other companies have hydrogen on demand technologies, including a very interesting effect patented by Prof. Kanarev, all have not been able to publicly disseminate their technology.

So where does that leave the public, open sourced public disclosures:

Allow NO WAITING FOR SOME COMPANY TO GET A PATENT

NO WAITING FOR SOME MANUFACTURER TO GET PRODUCT OUT TO THE MASSES

NO SPECIAL "HIDDEN COSTS" TO APPLY THE TECHNOLOGY

NO "I CAN'T SHOW YOU EVERYTHING BECAUSE OF INVESTORS" EXCUSES

NO WAY FOR THIS TO BE HELD BACK FROM THE PUBLIC IN ANY WAY EXCEPT FOR GETTING THE WORD OUT!

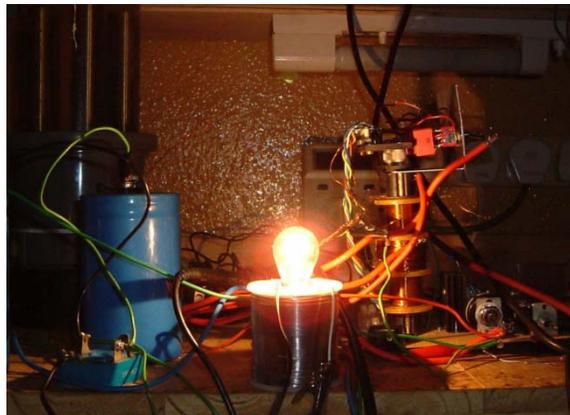
NUMEROUS PROVEN REPLICATIONS AROUND THE GLOBE!!!!

This replicated version of the Meyer's technology can be done on-board motor vehicles with a small auxiliary device powered by the vehicle's electrical system, in effect allowing the use of water as fuel to act as a boost to the internal combustion engine and improve MPG significantly. The combustible gas mixture produced is generated as needed, and not stored aboard the vehicle, making it possible to burn ordinary water in any Internal Combustion Engine, Turbine, Furnace, or Torch, processing it into fuel on-demand, in real-time, without transportation or storage of compressed or liquid Hydrogen, caustic alkalis, catalytic salts, or metal hydrides. This process yields only water vapor as exhaust, which may be easily recovered by means of a radiator/heat exchanger, and re circulated in the engine system if desired.

This is available for any one to replicate now on our on line university. The organization has hundreds of registered engineers who are seeking grants; a host of other water fuel cell engineers have begun to join a distributed research initiative to deliver practical, public domain technologies to the world in an Open Source environment.

All are prepared to collaborate in a resource grant based environment, as can be by done in the non profit organizations proposed granted research and development center, where a whole host of other technologies can be produced, all of which are profiled on the web site. Meyer's original performance levels were reported to be as high as 1700% efficiency from creating molecular resonant frequencies in water. Currently this water fuel cell technology needs further investigation to reach that level, and has alot of potential.

Recently tests on the replication of the Meyer's WTF cell also showed effects of cold current electricity. What is cold current electricity; it was used by EVGRAY in his patented radiant energy motors, where he was able to light up light bulb underwater using cold current electricity.



Dave Lawton's cold current electricity demo

EVGRAY like Meyers was also killed. We at panacea feel that the granted research and development center is needed to create social reform, as the public will know why its there and what subject matter goes on there, the main stream faculties can also benefit from the organizations findings and research and development., but we need grants to survive. Mean time any experimenters can replicate the open sourced findings of this and other technologies which are made available on the panacea online university.

Replication



To achieve Ravi's efficiency, a strict selection and preparation of stainless steel tubing is important. The following parameters need to be considered.

- 1) Choice of the grade of stainless steel
- 2) Tube gap and Thickness / SWG / AWG of tubes
- 3) Pre preparation and conditioning

Choice of the grade of stainless steel

Stan said he used T304 in line 52 of patent # 4936961. Ravi's choice was to use 316L seamless pipes. Use ONLY SEAMLESS PIPES and not seam welded. These tubes were annealed for 3 hours in inert atmosphere of Argon to remove all residual magnetism

and cold work stresses before they were assembled. Even Nitrogen can be used as the inert atmosphere. The tubes are annealed to get rid of the crystal lattice imperfections induced due to cold work and any traces of residual magnetism. They have to be in bright finish only you don't want oxides of nickel chromium or iron on the surface (more details in preparation below).

You can use most of the 300 series Nickel-Chromium Steels but 316L would be the most preferable and next would be 304L. Never go for 310 as this has the highest resistivity among the 300 series. Avoid Inconel grade (High Nickel Alloys) pipes as well due to their high coefficient of resistance. Just between 316 and 316L there's a lot of difference in resistivity of the material due to carbon presence. Seam welds have magnetized seam lines along the length of the tubes. You must have them annealed after machining/cutting/sanding before being assembled. If considering 316L stainless, the slight increase in Molybdenum, Nickel and Chromium would increase the Electric Specific Resistance of the material ever so slightly, but the thicknesses can offset this problem. One needs to find out if there is any Aluminium content in the grade. If the aluminum content is less than 0.5 Wt% or nil, you could use this if it is easily available in seamless form and your required size.

The reason why you need to check for Aluminum content is that it is used as a deoxidizer during the melting and alloying process. So there is a possibility of it remaining in trace amounts based on the amount of O₂ available in the bath for it to turn to Alumina and float up in the slag. Aluminum is the main component in Fe-Cr-Al alloys which increases the electrical specific resistance. In case these manufacturers use Cerium mischmetal or some other Rare Earths for deoxidizing, we don't even need to consider Al. The 316L seamless tubes Ravi used were sourced from a retailer of 'Sandvik, Sweden'.

Using 304

Stan claimed he was using T-304 SS. As there is no caustic electrolyte as such, is right to say that 304 grade s/s can be used. However, expect there to be a good deal of brown gunk generated during the conditioning process, with the additional part coming from the 304 material. There are some higher percentages of Ni and Cr in 316 and 2% of Molybdenum. Some of the manufacturers use Cerium Mischmetal (Rare earths) during the melting and pouring operations and this is done in the more expensive alloys like 316 to increase the hot life and the surface layer strength and in case of seamless tubes a little extra silicon is added for free flow in hot condition (Hot Extrusion of seamless tubes).

All these put together add up to different metallurgical properties of the material in our case. When in hot condition the Rare Earths, Silicon, Molybdenum tends to migrate towards the surfaces of the metal and this helps in the formation of a strong protective

surface layer (The reason why I said annealing was important). SS 316L is the only SS that can be used in human Medical Implants other than titanium, that's how stable 316L grade is.

In summery -The best grade of SS to use is 316L

Next preference is 316,304L and 304.

L stands for Low Carbon in the SS alloy.

316L composition: %
Carbon : 0.03
Manganese: 2.0
Phosphorous : <0.45
Sulphur : 0.03 max
Silicon : 1.0
Chromium : 16 to 18
Nickel : 12 to 14
Molybdenum : 2.0 to 3.0

Plain 316 SS nickel range is 10 to 14% and carbon being 0.08%
304 SS has lesser % of Nickel and Chromium and doesn't have Molybdenum at all.

Tube gap and Thickness / SWG / AWG of tubes

Ravi's tubes sizes used were:

Outer Pipe OD : 25.317 mm

Thickness : 14 SWG or 2.032 mm

Outer Pipe ID : $25.317 - (2.032 \times 2) = 21.253\text{mm}$



Inner Pipe OD : 19.930 mm

Thickness : 14 SWG or 2.032 mm

Gap is 1.323mm (21.253 - 19.930)



This was adjusted to both the sides as the inside pipe is centered is $1.323/2 = 0.6615$ mm on either sides of the inner tube. So effectively the gap between the pipes is less than 0.670 mm. Ravi went for a lesser gap by increasing the thickness of the outer tube. Ravi had some difficulty in the alignment of pipes as they were shorting. He had to get them straightened on a pipe alignment machine. Ravi does not suggest that people without engineering skills go for this small a gap, **but is convinced that the higher output of my setup could be due to this small gap.** SWG stands for Standard Wire Gauge

Suggestions are, you really don't want an outer tube smaller than one inch, so that pushes us to the 2 mm wall thickness. The inner diameter of a 25.4 mm tube 2 mm thick (14 SWG) is 21.4 mm, so for a 1 mm gap, the inner tube needs to be 19 mm. The outer diameter of a 3/4" tube is 19.05, which would give a gap of 1.175 mm. For a 1.5 mm gap, you would need an inner tube diameter of 17 mm.

If you were to use the 1-inch 16 SWG (1.626mm, then it is difficult to determine the exact wall thickness, so you should check with the supplier. In that case, a 20 mm inner tube would give 1.1 mm (or 1.112 mm) and if the inner tube has a diameter of 3/4" or 19.05 mm, it would give a gap of 1.575 mm (or 1.587 mm). Ravi suggests, Order for an outer pipe of 1" (25.4mm) OD and a thickness of 16SWG (1.6mm) and an inner tube of 20mm OD. This size should be available commercially anywhere. With this you can get a gap of 1.1mm. If you want lesser gap than that just increase the thickness to 14SWG (2.0 mm), this should give you a gap of 0.7mm but is very difficult to align as the spacing is close.

Calculation: (Both setups have same tube diameters)

Dave's WFC: 6 tube of 5 inch length. Considering the gas generating heights of 6 tubes x 5 inches = 30 inches in length/height. Ravi's WFC: 9 tubes of 9 inch length. That's an increased reactive surface area of over 150% than Dave's. Dave's and Stan's systems had a spacing of 1/16" (1.5875mm). Ravi's pipes have a gap of less than 0.670mm (could be the main reason for the higher efficiency in his unit).



Dave Lawtons cell

What also must be taken into account is that Ravi is using 9 tube sets of 9" length and the inner being 1/2" more than the outer for connections. Dave used 6 tubes of 5" length for his 300% OU.



Dave Lawton's cell

Stan's were 9 tubes of 18" length on his demonstration electrolyzer and in one of the videos available. In Stan's version there are claims that he's making 1700% OU over Faradays. When compared to this efficiency Ravi states he has some more work to do. However any OU is good OU :).

Pre preparation and conditioning



Preparation of the Tubes: IT IS ADVISED THAT POLISHED TUBES ARE NOT TO BE USED IN MAKING THE WFC. If one is to use them make sure they are not Nickel plated or Hard Chrome plated pipes. If they are Plain SS 304L or 316L but polished you must use a sand paper on them before hand. The brightness of your tubes reflection is based on how small a grit of sand paper you use. The tubes have been fixed to a lathe and sanded with very fine grit paper to remove any oxidation on the surface after annealing of the pipes. The inner tubes need to be sanded to remove all discoloration (oxides). Use as

small a grit to get fine scratches and when you condition at low amps the bonding between the white coat (explanation later) and the metal is good. **Do not try high amp conditioning at the start as you want a thin fine layer on the fresh metal.**

If you order large pipes and cut them, you need to get the tubes annealed once they are cut and finished to lengths before being assembled. It's done in a separate inert atmosphere furnace of Nitrogen or Argon. You have people who do heat treatment for metals they'll give you the procedure if you tell them the grade you are using.

Tell them that you need a bright anneal in nitrogen or argon atmosphere. Annealing is done after every cold work operation and at the finishing stage to reset the lattice structure. As we are cutting the pipes and slightly finishing the surfaces with sand paper to remove any imbedded impurities during tube drawing, it's all cold working. So you need to relieve these induces stresses in the lattice through annealing.

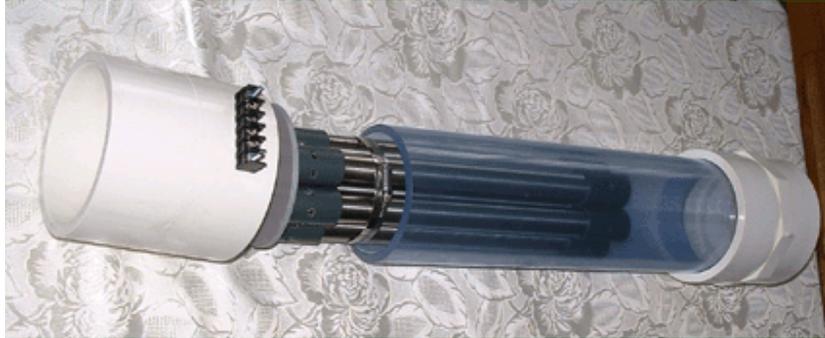
Ravi advises - Use an abrasive cutter or a saw and then **anneal them** as you induce a lot of stresses in the lattice during cutting due to the hot and cold areas. If you use laser then you could cut the annealed tubes as you are not inducing any mechanical stresses during the cutting but **you could check along the length with a compass and see if there's any difference. Take a compass close to the tubes and you can usually see it deflecting before annealing but once the annealing is done the deflection is a fraction of what you have seen before on the same tubes or none at all, this is what you want.**

Assembly options- It appears that Dave Lawton used insulated copper wire to connect to his tubes. Ravi used spot welded stainless steel wire on his tubes. Originally Ravi had his wires too long which had a negative impact on his efficiency. He then had to shorten them.



[Video -New copper leads being connected by shortening the length of previous leads](#)

As per Stan's Patent each inside tube is connected to an individual variable resistance. He has 18 leads (9 +ve and 9 -ve). Ravi has since advised that copper leads covered with high temperature automotive silicone sealant are better than SS leads. The RTV silicone is to be applied only at the exposed copper connecting the pipes and no where else. Or alternatively, you can construct the cell as seen from Panacea's endorsed "[the hydrogen shop](http://www.thehydrogenshop.com/)" version.



<http://www.thehydrogenshop.com/>



Another construction option is illustrated in the following isolated wire plexi glass design.



If using the sealed copper wire option, the ends of the copper wire needs to be sealed with high temperature heat resistant silicone sealant and should not contact water, as this generates a lot of greenish brown muck. Therefore put silicone sealant or automotive gasket silicon sealant all over it so that the water doesn't touch any of these parts. Then use the sealant over the exposed copper wire.

For stainless steel lead in wire, the thinner SS wire you use the higher the electric resistance. If you use SS go for the thickest possible leads you could weld. It is advised to reduce the outside length of the wires as much as possible to reduce resistance. Go for at least 3.0mm or higher to reduce the electrical resistance. Panacea choose to spot weld stainless steel wire onto our tubes. Our wires were 4mm thick. **DO NOT USE 316L AS LEAD WIRE THEY HAVE TOO HIGH A SPECIFIC RESISTANCE TO BE USED AS LEADS** approximately 46.8 times that of copper. In case you want to introduce a resistance on the negative lead (60a...to 60n in Stan's Patents) you could always used a wire wound variable resistance. This seems to have been the problem of leads heating up.

Specific Resistances:

Copper : 1.63 MICROHM-cm

316 : 75 MICROHM-cm

Ravi chooses to use plastic tubing around his wires only to avoid shorting of the positive & negative leads.



Ravi's cell showing the plastic insulated SS wire

The SS wires act as resistors. The specific resistance of 316L is around 75 Micro-Ohm-cm and that of copper is 1.72 Micro-Ohm-cm. The leads heat up when higher amps are drawn by the freq gen. I've replaced the leads up to the bottom of the WFC with 4 Sq.mm double insulated copper wire and the heat generation did come down.

When choosing clamps for your water fuel cell. Always choose Stainless steel Clamps, never choose galvanized clamps, If the clamps rust then the nickel % is extremely less for it to be used. Galvanized are basically Mild Steel screws / clamps which are zinc plated. The plating would come off in no time and you will have brown muck all over. They have to be SS or the brown muck would never stop. Extra clamps for support are ok but have to be SS 300 series (302,304,306, 308, 310, 316) only and not 200 or 400 series

For spacing between the tubes any nonconductive flexible material will do even the speaker wire plastic covering will work with this.

[Video 1: This video shows the innards of the WFC without water](#)

[Video 2: This video shows freshly filled Tap Water.](#) No other impurities (Read no Salts or Acids or anything at all just plain tap water and not distilled water) added.

Additional options

In one of Stans patents he talked about using [polyoxymethylene \(Derlin\)](#) which has a high dielectric constant. He used Derlin on the outside of the outer pipe and the inside of the inner pipe to contain the electron leakage. The barrier formed by the conditioning (explanation below) coating has a comparatively lesser dielectric constant than the Derlin material thickness used. Also D14 originally talked about creating slots in the outer pipes. This has not been confirmed yet, and should be investigated further.

Conditioning

Average time takes 4 weeks, based on Dave's and Ravi's reports. The impurities in the water differ from place to place. This makes a huge difference. You could see this difference by using ground water and water from streams and lakes which has been exposed to sunlight. Ravi chooses to use tap water.

Electrode conditioning helps by providing an appropriate insulating layer on the electrodes and that helps to lower useless current leakage through the water. [Check this video](#). You can see the confirmation of non conductivity of the layer formed. The white insulating coating formed during conditioning is non conductive in between the tubes (pipe gap) so you need to take it for granted that the process is basically dielectric breakdown of the bonds. The initial conditioning is very important. Ravi recommends to only using the following process described.

DO NOT GO ABOUT CONDITIONING WITH HIGH AMPS ONLY AS YOU'LL ENDUP HAVING A WEAKLY BONDED COAT ON YOUR NEGATIVE TUBES. LOW AMP CONDITIONING IS EXTREMELY IMPORTANT FOR PROPER BONDING OF LAYERS TO THE BASE METAL and the previous layers.

The bond strength of the layer can be increased further as after every cycle of conditioning. You need to stop for an hour at least. **During this period you can let the pipes air dry after every full cycle.** This compacts the layer even more due to the loss of moisture from the surface. Then change the water and go about the next conditioning cycle. Never touch the layer till it dries up completely.

Ravi's procedure:

- 1. Do not use any resistance on the negative side when conditioning the pipes.*
- 2. Start at 0.5 Amps on freq gen and switch off after 25 minutes and stop for 30 minutes*
- 3. Goto 1.0 Amps for 20 min and stop for 30 min*
- 4. Goto 1.5 Amps for 15 min and stop for 20 min*
- 5. Goto 2.0 Amps for 10 min and stop for 20 min*
- 6. Goto 2.5 Amps for 5 min and stop for 15 min*
- 7. Go to 3.0 Amps for 120 to 150 seconds. You will then need to check if WFC is getting hot, if it does you need to reduce the time.*

AFTER THE 7 STEPS ABOVE LET THE WFC STAND FOR AT LEAST AN HOUR BEFORE YOU START ALL OVER AGAIN. You would hardly see any gas generation at the beginning and it makes a lot of brown muck. It took Ravi and Dave about one month before the brown muck disappeared.



Brown muck produced

Change the water after every cycle initially. **DONOT touch the tubes with bare hands if the tube ends need to be cleaned of muck use a brush but do not touch!!** Ravi's experience showed that leaving the brown muck in water for the next cycle goes on to heat up the water and you need to avoid this. Over a period of time you will see a reduction in generation of the brown stuff. When the muck is reduced you should see a gradual decrease in the Amp draw for the same amount of generation. An artist painting brush would be perfect to clean the tube ends during and after conditioning. When you are conditioning you don't need to connect the VIC -voltage intensifier circuit (Toroid + Inductors).

Eventually the pipes will not produce any brown stuff at all. At this point you should now have a very good generation of gas. You will get a whitish powdery coat on the surfaces. Never touch the pipes with bare hands once this comes on.



A white insulation coating formed on the negative

DO THE CONDITIONING IN A WELL VENTILATED AREA OR PREFERRABLY CLOSE THE TOP AND VENT THE GAS OUT IN THE OPEN. AS THE WFC IS LEFT ON FOR QUITE SOMETIME EVEN

SMALL AMOUNT OF GENERATION CAN GET ACCUMULATED IN A CONSTRICTED SPACE AND COULD BE A HAZARD.

The above process is to be done after annealing the pipes. See to it that no oxide formation is left on the pipe and use a detergent to wash off the pipes and rinse them thoroughly with fresh water. Then assemble the setup including the leads and base. **Finally flush the pipes with lots of fresh water do not touch the pipes with bare hands after this.**

[Aaron's video explaining about the non conductive Layer](#)

When the power is switched on you see bubble formation on the external surfaces of the outer tubes just like in the video. This happens all along during the conditioning process. Ravi states he remembers Dave saying that you know the tubes are conditioned when these bubbles stop forming on the external tube surfaces and you see a white powdery coat on the tubes. Ravi went on conditioning even after that and ended up with larger bubbles.

Ravi states it is critical that people follow the conditioning procedure as you get very uneven coat formation on the surface if you use High Amps for long periods. When you go above 3 Amps there's a possibility of the coating flaking off. The bonding between layers would not be that strong. These layers form one over the other after every cycle of conditioning. The small time high Amp conditioning gives you an uneven coat and the long time low Amp conditioning evens out this more or less. The longer you use Low Amp conditioning the better the end outputs!

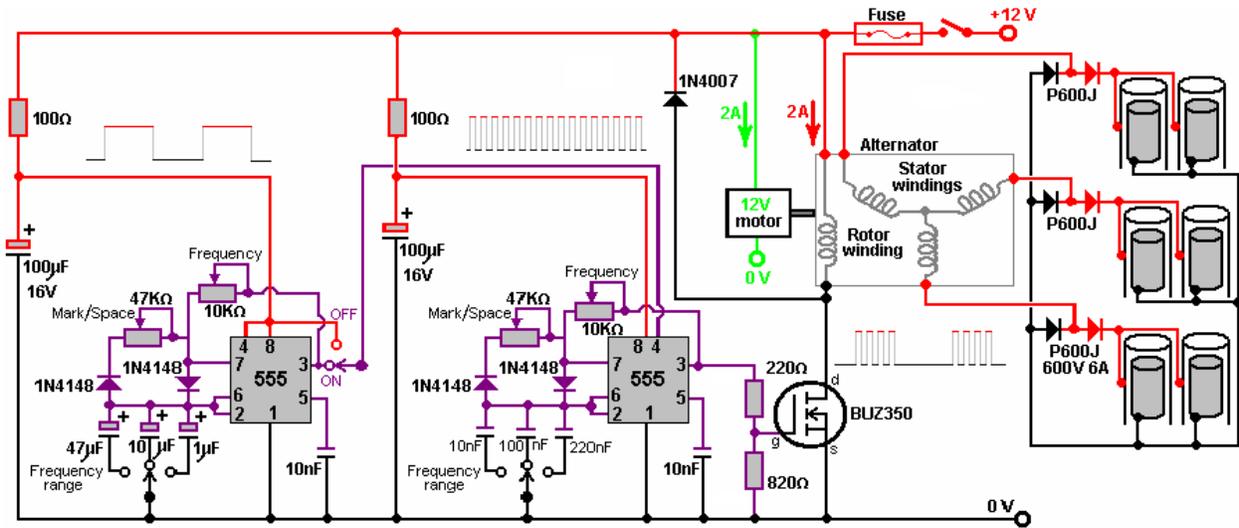
Ravi has also used 0.2 amps for low amp conditioning. This is ideal how ever time consuming. If you do the procedure described above and still wish too build up a better coat afterwards then you can use the 0.2 amp conditioning process afterwards.

Circuit operation

Alternator



For some there may be more losses in the alternator than the solid state version. The original alternator schematic will be included. It is recommended you use the solid state version and get it working first. The alternator was only done by Dave to mimic the car's operation in Stan's operation.

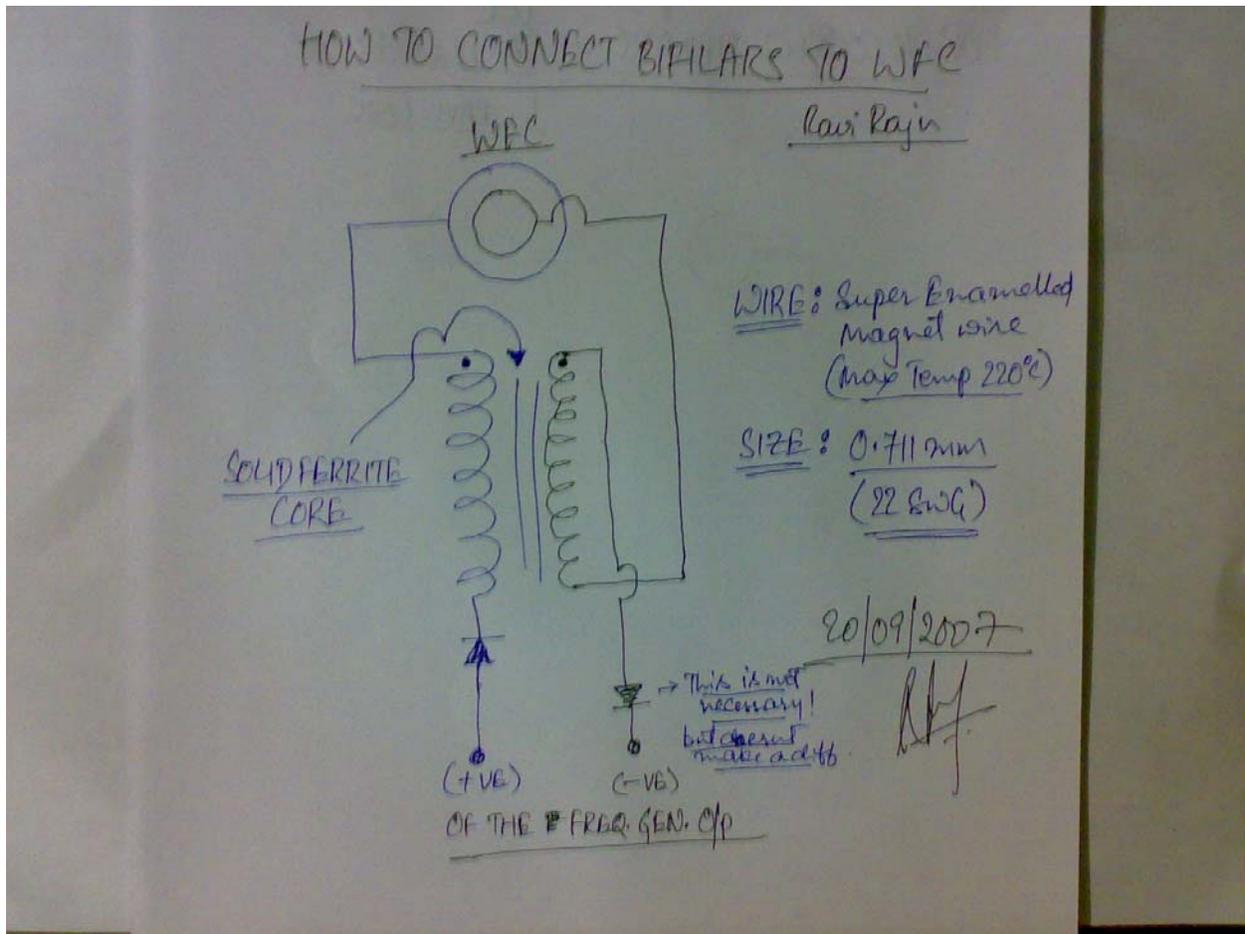


Bifilar Inductors Test



One needs to experiment and search for superior circuitry as Stan Meyer did. Stan had a better circuit which he never disclosed - the UK TV documentary states that Stan would not even let them point a camera at his more advanced cell.

The inductors were actually part of the VIC. Dave had used the exact specs (100 turns, wire dia, etc) of the inductors mentioned in Stans US Pat 4936961. Then Ravi had later added the toroid and the diode as per the VIC which increased the efficiency compared to using only the inductors. Ravi had not used the variable inductor mentioned in the patent. His were wire wound like mentioned in the old D14, pg7.

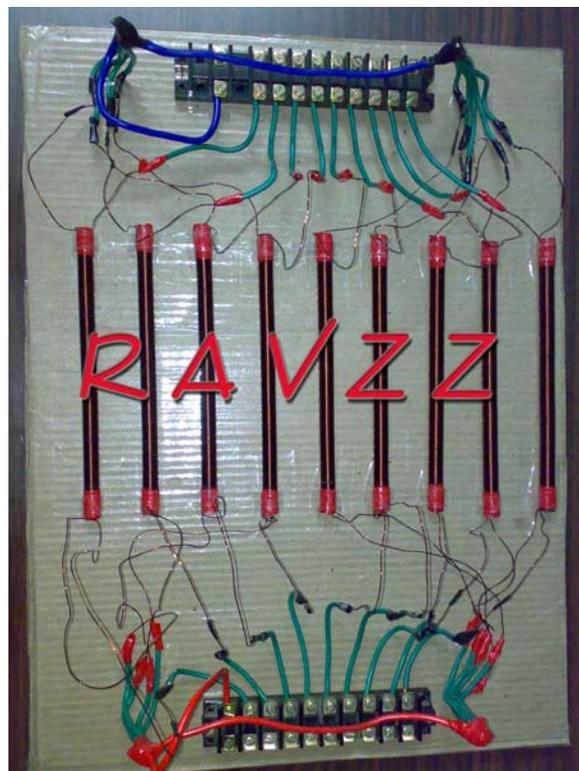


Ravi states "The inductor on both positive and negative is a must. I've made it on a Ferrite rod of 25 mm length 100 turns of Double Enameled Electrolytic Copper (99.99%) of 22 SWG (0.711mm dia)" which was what Dave suggested."



You will notice an increase in gas generation when the bifilars are connected. Try with one in the beginning if it heats up increase the number of inductors.

Ravi used 9 individual bifilar wound inductors for 9 tubes with 22SWG magnet wires. The inductors and the toroid (Part of the VIC) do heat up after a while and the efficiency comes down this happens due to the temperature coefficient of resistance of copper. So the answer to this problem would be to use bigger inductors and toroids and thicker wires.



The VIC specs give as per patent 4936961 in page 6 of the toroid size would probably be OK for a very small setup but may be not for the lengths and the numbers Ravi is using. Stan gave a basic idea of how it should be but we need to figure out the specs for our own build sizes. My WFC is not a done thing its still in an evolutionary stage and lot of combinations with the inductors are yet to be tried out.

The VIC basically needs a toroidal core and a 600V 40A metal diode with a heat sink. The specs of wire sizes and turns are in Stans US pat 4936961. He has a variable inductor in the patent on the -ve side but what Ravi has is a regular inductor, two of them one on positive and one on negative. Ravi states he would not suggest using bifilars as inductors as they ended up shorting three of the tubes.

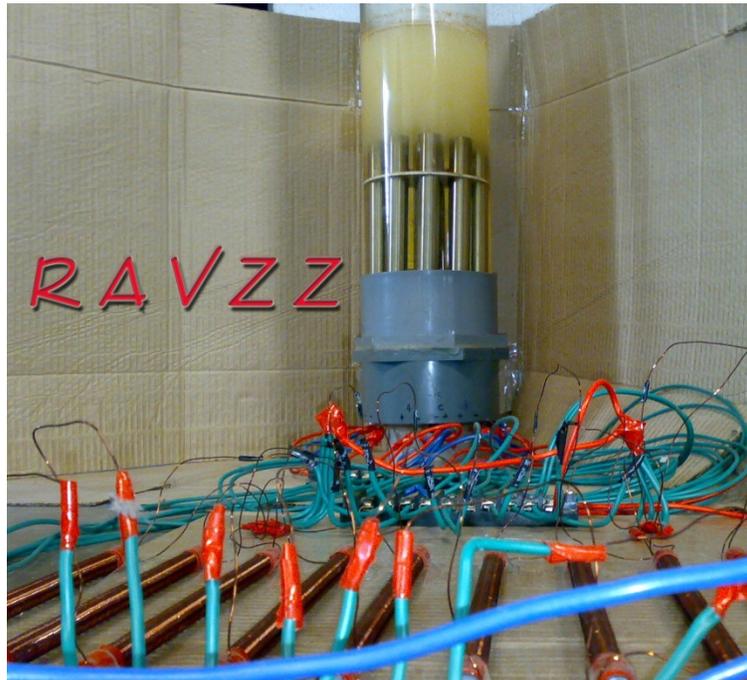
The 100 ohm 0.25W resistors were replaced with 100 ohm 0.5W as 0.25W kept burning out. The bifilar inductors are wound on ferrite cores using the recommended turns stated in the D14 document.



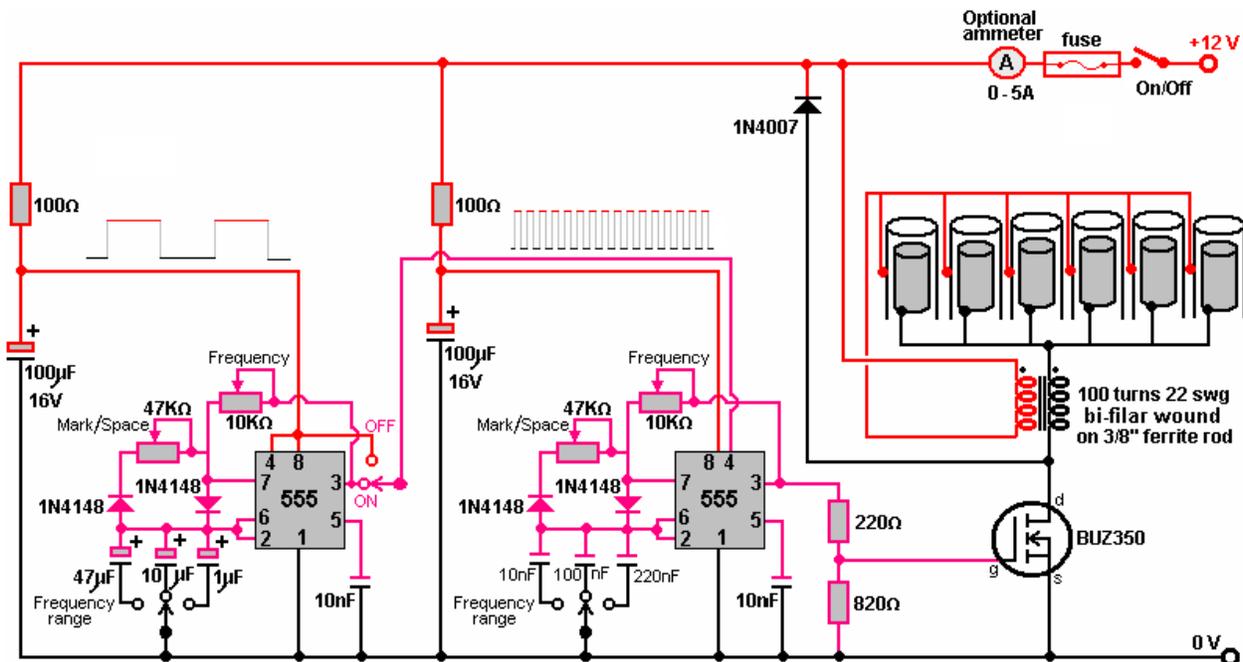
When using Ravi's version, you must use the diode to cut out the back EMF, Ravi states that this is very important! And is what gives you huge generation, this part is not mentioned by Dave or in D14. You end up getting all the juice from the system only if your tubes are conditioned enough.

[This video shows](#) the higher output is all to do with the inductors in the D14 circuit and conditioning and slightly through the resistance wire to reduce the current draw. Even without the resistance you can get the same output but another 0.3 to 0.6 amps extra but I feel this could be offset by making a bigger inductor. Just go on conditioning and keep reducing the amp draw to the WFC gradually and the generation would kind of remain the same even at very low Amps. Once you condition the tubes your

generation will dramatically increase and the current required will fall by leaps. It took Ravi almost 3 months approximately to reach these outputs.



Above is a picture of the multiple bifilars Ravi tried on the WFC. These were connected to each pipe individually. Diode used 1200 V 40 Amps. Solid core length 8" wound with 0.711 mm conductor end to end. The generation increased by approximately another 10cc of gas for a 20 second period compared to regular wound inductors. This works on efficiency!! Need to try out other combos to see if it can increase some more.



Variable resistors

Ravi also experimented with using Nichrome 80/20 Resistance Alloy wire in 1.6 mm diameter as the variable resistor. This has resistance of 0.52 Ohms/mt. The efficiency of the cell comes down initially. Ravi states that "if I dont use it for about three to four days but about ten to fifteen minutes after its switched on it gets back to the higher efficiencies".

If you go through Stan's patent 4,798,661 on page2 Figure 1 these variable resistors are designated by the numbers 60a to 60n which are individually connected to each of the inner tubes. Ravi has not tried the immersed exciter array in figure 1 this could probably increase the efficiency even more!

Connecting the unit to an ICE

The main reason why Ravi wanted to free source this process was to be used for vehicles as this unit cannot / would not be allowed to be sold commercially as it can give you at least 50% gain in mileage! This would reduce the world's automobile pollution problem drastically. Power generation through an ICE is not that feasible due to the high wear pertaining to automobile engines when used continuously for months together. As per Ravi's calculations the engine needs a re-bore every two months if used continuously!! So the only viable alternative is to use in small Turbines. For backup gensets, IC Engines could be OK. When connecting to an ICE there are a lot of minor to major modifications and tune ups need to be done depending on the engine type and year of make.

[Video 3: This video is after the top is sealed and with an input of 0.5 Amps from the Frequency Generator.](#)

Frequency Generator

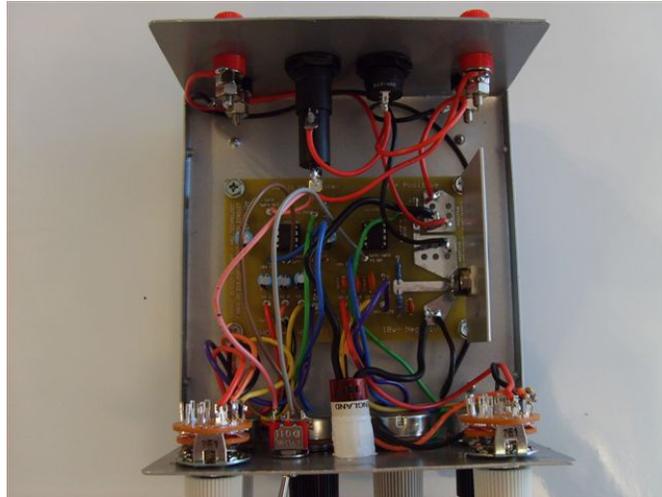
All Photo's Supplied by <http://www.vptechno.com/>



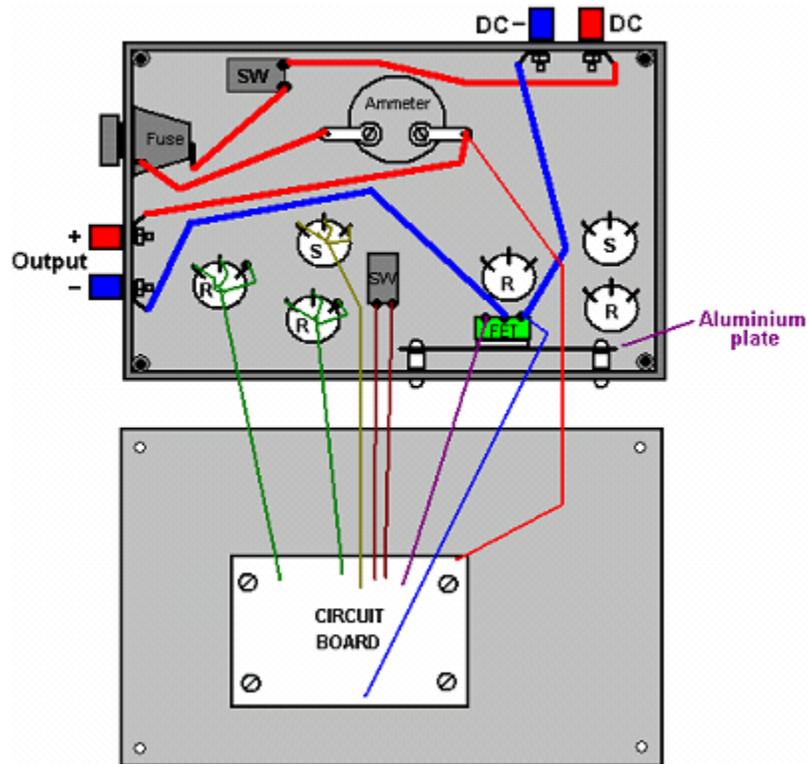
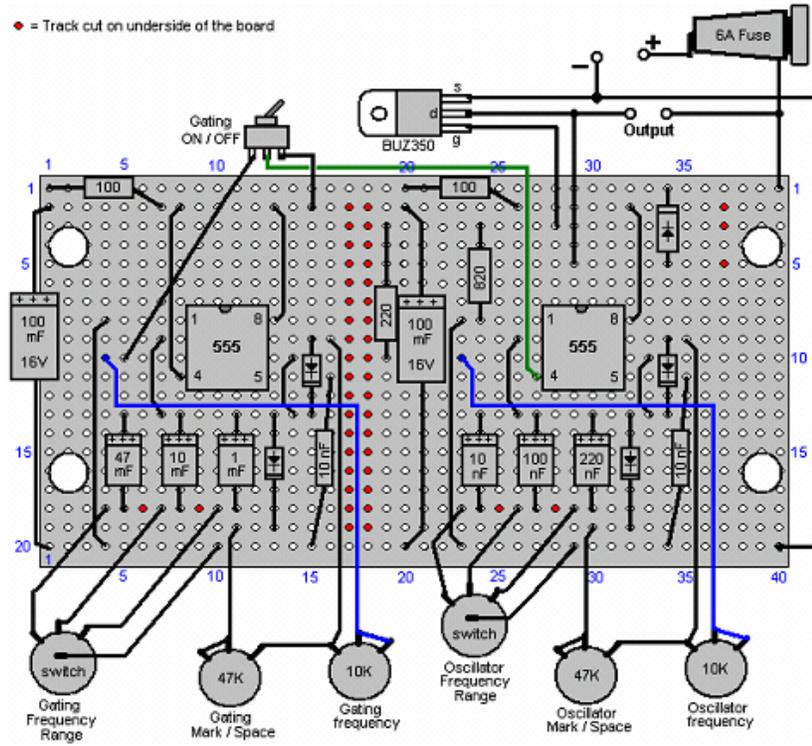
Front view

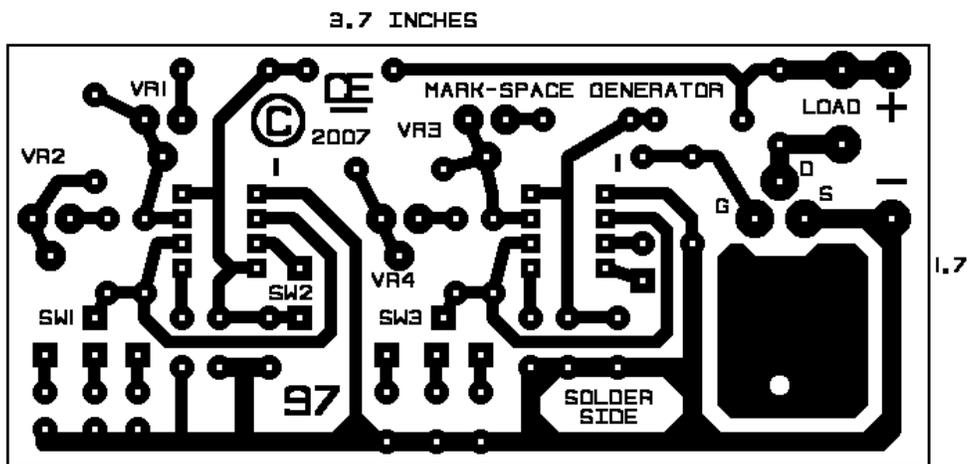
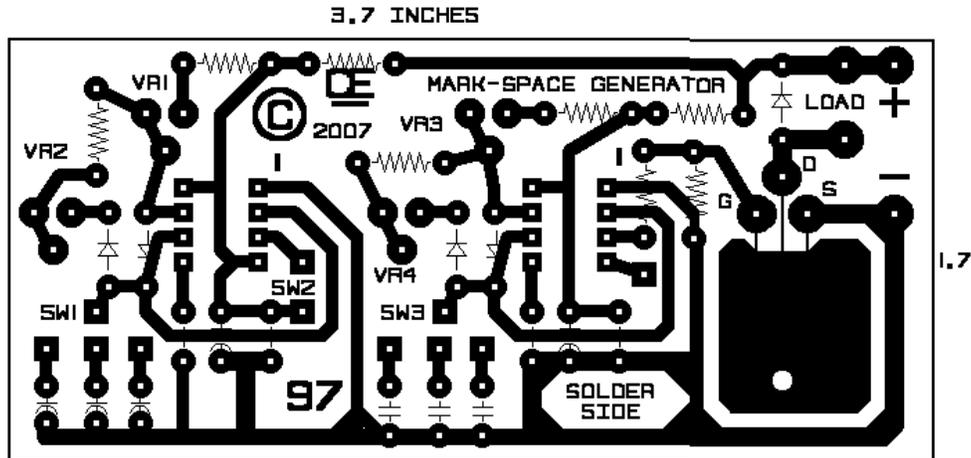


Rear view



• = Track cut on underside of the board





Faculty information

Solid state version

Ravi advises that if the FETS in your signal generator are blowing, the best option would be to alienate the freq gen by introducing the VIC in between. Go through Stan's US Pat 4936961 for the construction details of the VIC. All that is required are the inductors and a torroid to be wound as per the patent. Ravi states to use larger diameter wires and a larger torroid to avoid heating up of the windings. Also use a high speed 600-1200V 40 Amp diode in between the positive of the inductor and the torroid's secondary. Problem solved!

Originally Dave's 100 turn inductors were actually made from this VIC description. He did only the inductors and left out the torroidal and the diode. The torroid is the one that isolates the frequency generator and steps up the voltage. Ravi reports that he has already tested it and it improved the gas generation even more.

Faraday calculations

Calculating 2.4 Watts x 1 hour long applied / liter. 2.4 Watt hours of energy per Liter. That's multiplied with the hour not divided by the hour.

$$\text{Volts} \times \text{Amps} = \text{Watts}$$

$$12 \times 0.51 = 6.12 \text{ watts}$$

The generation is around 7 cc/sec of H₂ + O₂

This converts to 4.66 CC of H₂/sec which converts to 16.776 Lits / hour 16.776 x 2.4 watts (Faraday/lit/hour generation) = 40.262 Watts. Ravi seems to be generating the equivalent of 40.2 watts as per Faraday with just 6.12 Watts. This would mean he is generating 550% excess as the above works out to $40.2/6.12 \times 100 = 656.86\%$ 656.86 - 100 (Faraday) = 556.86% OU !!

Presently the approximate volumetric gas discharge by an inverted measuring flask is given below:

INPUT--H₂+O₂ cc/sec---H₂ only cc/sec---H₂ Lit/hr

0.5 A	7.00	4.66	16.776
1.0 A	8.66	5.78	20.808
1.5 A	11.66	7.78	28.008
2.0 A	14.00	9.33	33.588
3.0 A	16.36	10.91	39.276
4.0 A	18.00	12.00	43.200

H₂+O₂ was calculated on an average basis for collection time of 30 secs. I'm not very sure of H₂ and O₂ volumes as I've calculated H₂ as 2/3rd the volume of the total and O₂ as 1/3rd the volume. Incase im wrong please do let me know how to calculate these.

[Video of Gas flow test](#)

The gas collected was over 150CC could be 160 / 165CC. As some might say that there could be Steam / Vapour / Mist lets just take the output as 150CC in 20 Secs. This comes to 7.5CC of gas/Sec at 0.48A - 0.50A. Last I checked with the old leads was 7.0 CC gas without any thing removed from the generation.

[This video](#) shows the voltage input and the amps in both digital and analogue meters. One part of the pulse circuit was switched off (left side 555 in the D14 with the switch on pin 3) and you can see that the current draw is over four fold.

Conditioning

The conditioning time was pretty long. The surface forms a layer of Nickel oxides along with Chromium oxide as well and in the case of 316L you have @ 2% Molybdenum in the SS alloy but you could be right about the Cr oxides acting as a dielectric. Nickel passivates in air and forms oxides like Zinc in galvanised form. Example: incase you need to electroplate on nickel you need to reactivate the surface layer before the plating process or the plated layer just peels off.

The initial conditioning is very very important and I recommend to use the process I posted as with lesser Amps you form a thin fine grain layer and once you increase the Amps the grain size of the deposition layer increases. The bigger grains can come off the surface easily...so once you do this you go back to the longer time low Amp conditioning in the process I posted...this again reinforces the larger grains deposited during the high Amp conditioning to bond to the base / previous layer.

I have never posted this info before but this is the reason why different Amp levels are used in the process. I have to give the reasoning for the low Amp conditioning as a lot of replications seem to be taking the short cut method of conditioning at high Amps to save time.

PLEASE DONOT GO ABOUT CONDITIONING WITH HIGH AMPS ONLY AS YOU'LL ENDUP HAVING A WEAKLY BONDED COAT. LOW AMP CONDITIONING IN EXTREMELY IMPORTANT FOR PROPER BONDING OF LAYERS TO THE BASE METAL and the previous layers. FOLLOW THE POSTED PROCEDURE. It's a time consuming process but worth the effort.

The bond strength of the layer can be increased further as after every cycle of conditioning you need to stop for at least an hour. During this period you can let the pipes air dry only after every cycle...this compacts the layer even more due to the loss of moisture from the surface...then change water and go about the conditioning cycle. Never touch the layer till it dries up completely.

Additional options

Using Delrin

FIGURE 3-24: FUEL CELL

170

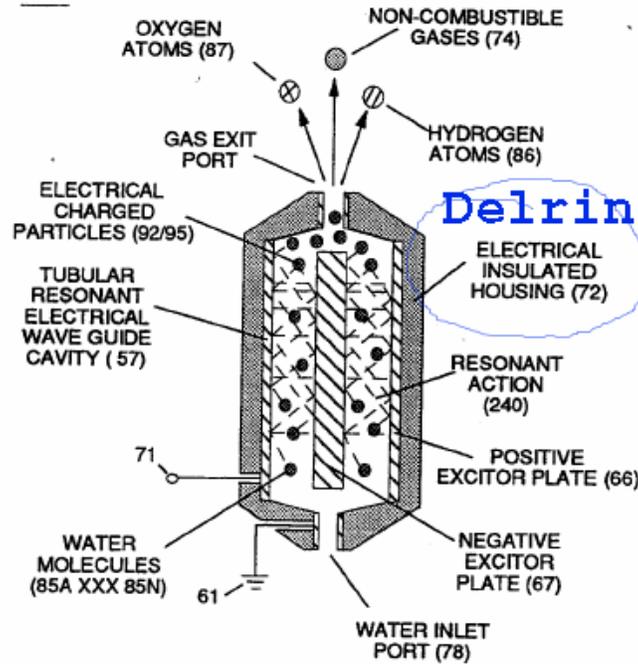
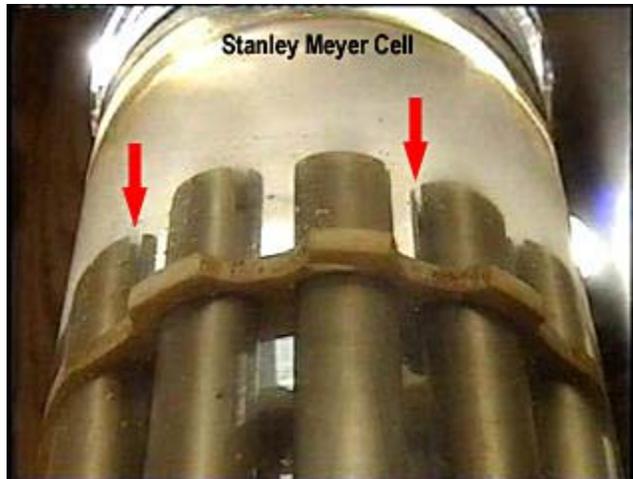


FIGURE 3-25: RESONANT CAVITY

In one of Stan's patents he talked about using [polyoxymethylene \(Delrin\)](#) which has a high dielectric constant. He used Delrin on the outside of the outer pipe and the inside of the inner pipe to contain the electron leakage. The barrier formed by the conditioning coating has a comparatively lesser dielectric constant than the Derlin material thickness used.

Slots cut into the outer pipes

The picture below clearly shows there are slots in Stanley Meyers tubes, light can be seen though the slots eliminating the possibility of it being spacers. A Rectangular slot cut in the top of each tube can clearly be seen.



Stan's cell in operation – Scene is taken from a documentary on Meyers

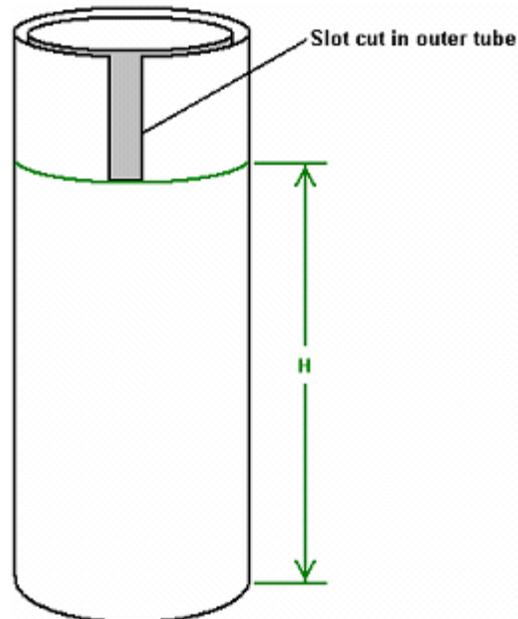
If you think about it, pipe organs have similar “slots” in them specifically to alter the pitch or frequency vibrations. In this design the Inner tubes of the pipes are smaller than the outer ones. It is therefore reasoned that Stan may have used the slots in the outer tubes to match the resonant frequency of the inner tubes.



WFC by spike

The original D14 document offers the following advice is experimenting with this idea. Hanging the inner tube up on a piece of thread and tapping it will produce a sound at the resonant pitch of the pipe. Cutting a slot in one outer pipe, suspending it on a piece of thread and tapping it, will allow the pitch of the two pipes to be compared. When one outer pipe has been matched to your satisfaction, then a slot of exactly the same dimensions will bring the other outer pipes to the same resonant pitch. It has not been proved, but it has been suggested that only the part of the outer pipe which is below the slot, actually resonates. That is the part marked as “H” in the diagram below. It is also suggested that the pipes will resonate at the same frequency if the

area of the inside face of the outer pipe ("H" x the inner circumference) exactly matches the area of the outer surface of the inner pipe. It should be remembered that as the entire pipe pairs will be resonated with a single signal that each pipe pair needs to resonate at the same frequency as all the other pipe pairs.



Cold Current Circuit

If you are experimenting with the cold current circuit, and wish to alter the values of the circuit components for example the capacitors. Please keep the following in mind.

Ignoring some relatively minor construction features, capacitors are all the same. They act as a reservoir for electrons. If you have a lot of electrons like in a power supply, then you need big capacitors - the bigger the better. If you are passing low frequency AC through a capacitor, then when the signal is high, electrons will flow into the capacitor. When the signal goes low, those same electrons will flow back out. You need to make sure that the storage capacity inside the capacitor is big enough to handle the current flowing in and out. If the frequency is high, then the signal is only high for a very short time and so not much storage capacity is needed. Consequently, high frequency capacitors can be very small in size. BUT if the capacitor is high quality and has low leakage as a component, then a large capacitor can do the job at high frequency just as well (though it is physically bigger, heavier and more expensive) - just commonsense really.

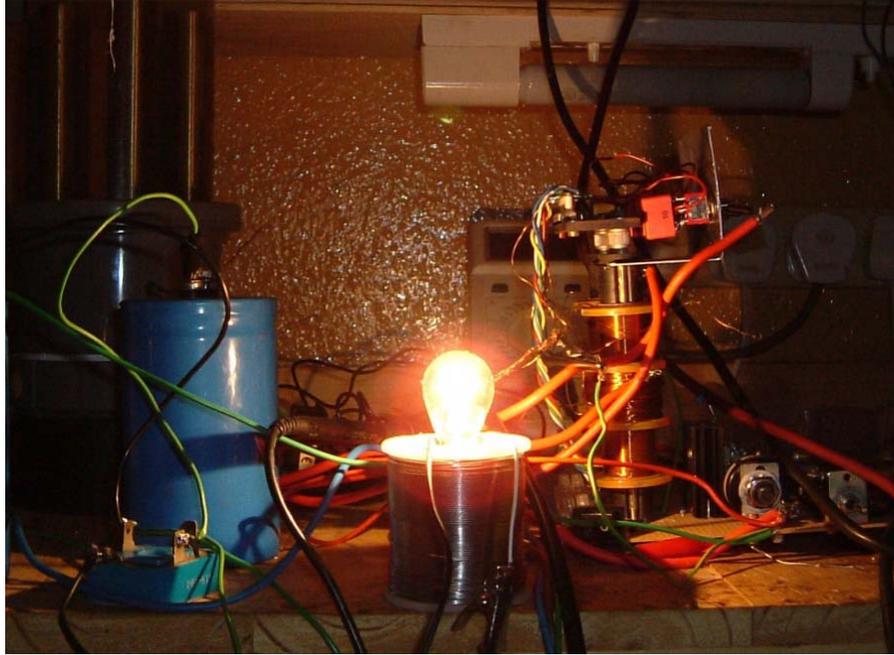
When used in a timing or oscillator circuit, small capacitors fill up faster and as the circuit switches over when the capacitor is full, the generated frequency is higher. The rate of current flow into a capacitor is controlled by the size of the resistor feeding it -

the higher the resistor value, the lower the current flowing through it, the slower the capacitor charges up, the lower the frequency of the oscillator.

You will see this in, say, Dave Lawton's circuit where the frequency range is selected by switching a larger capacitor into the circuit to get a lower frequency. 47, 10 and 1 microfarad for slow, medium and fast gating while the high frequency oscillator which is being gated has 0.22, 0.1 and 0.01 microfarad capacitors giving a very much higher frequency. (The old version was drawn with the switches operating in opposite directions). There is lots of scope for variations, but typically, 10 microfarad capacitors are for switching in the 10 Hz or lower region, 0.1 to 1 microfarad for high audio frequencies, and 0.01 or smaller for ultrasonic or radio frequencies.

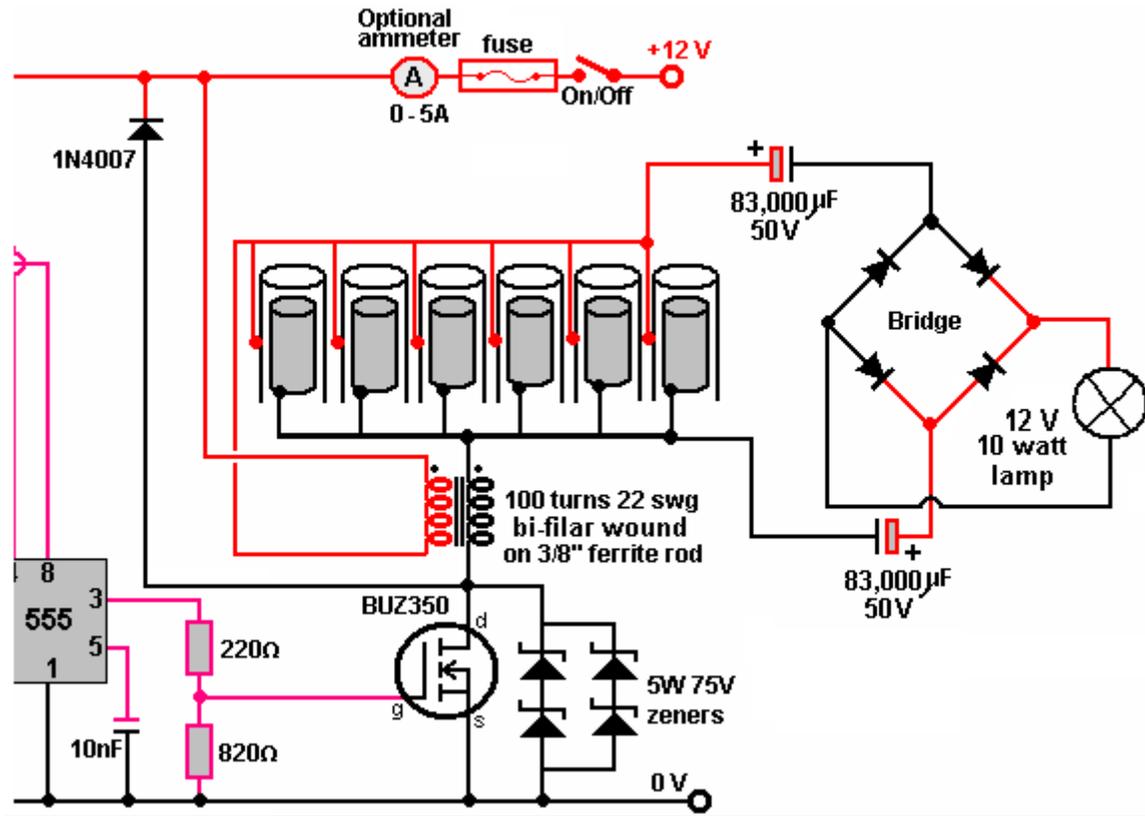
A third party has confirmed that after speaking to Dave Lawton on the phone **he expressed the opinion that the size of the capacitors was not particularly important as the frequency was high.** Dave was doubtful about that and said that the bulb lit better the larger the capacitor was. So, although some may see no logic for it at all, it is better to go with very large capacitors.

Note –on the circuit it looks as it is a DC cap. There is no such thing as "an AC capacitor" or "a DC capacitor" there are just "capacitors". They are all the same, with the slight exception of manufacturing differences in the materials used. Tantalum has minimal leakage and can hold their charge for days on end, but they don't go above 1 mF in capacity. Electrolytic capacitors can have massive capacities but their leakage can be massive with the charge bleeding off rapidly from really big ones. So there is no AC or DC capacitors, just "capacitors" and any of them can be used for any application. Low capacitances can't handle low frequencies properly as they fill up long before the waveform has returned to zero, so the waveform gets chopped off and highly distorted.



Dave Lawon's cell shown lighting up a bulb with "cold current"

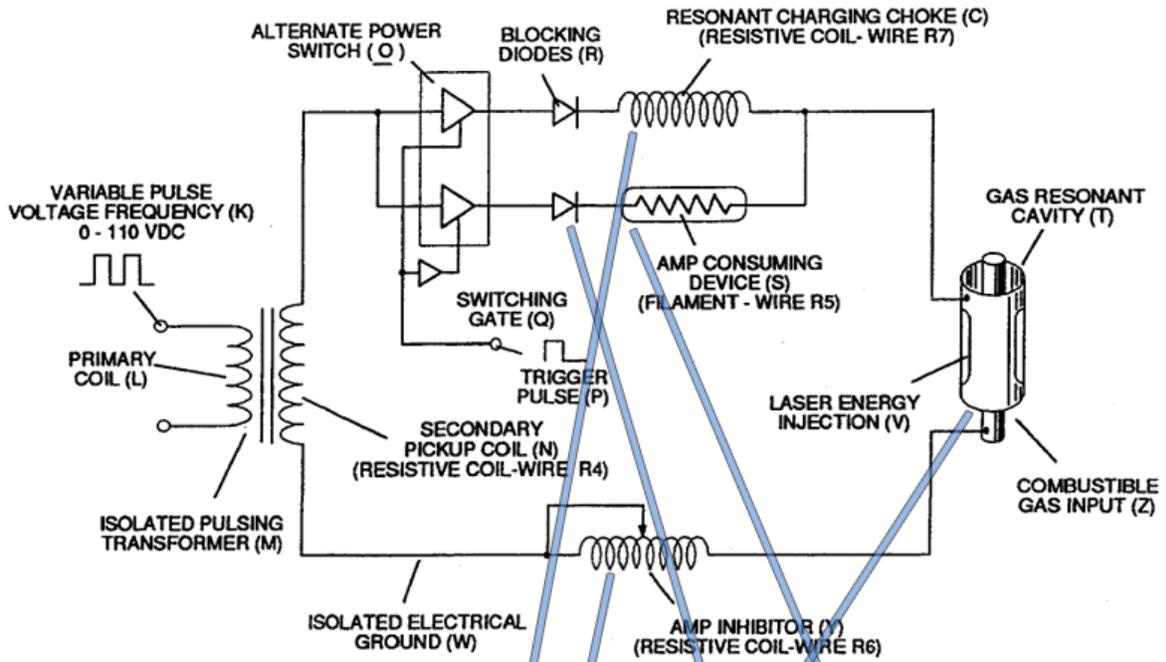
By showing the capacitors that Dave used, without making it clear that he used those capacitors as they happened to be sitting on his bench at the time he was experimenting with the circuit. It is highly likely that any electrolytic capacitor will work in that position. Just whack one in and see if it works well. A 'common-or-garden' 1000 mF would probably do very well - just try whatever is to hand. It is definitely NOT the case that Dave tested lots of capacitors and found that the only ones that worked were the ones shown in the circuit.



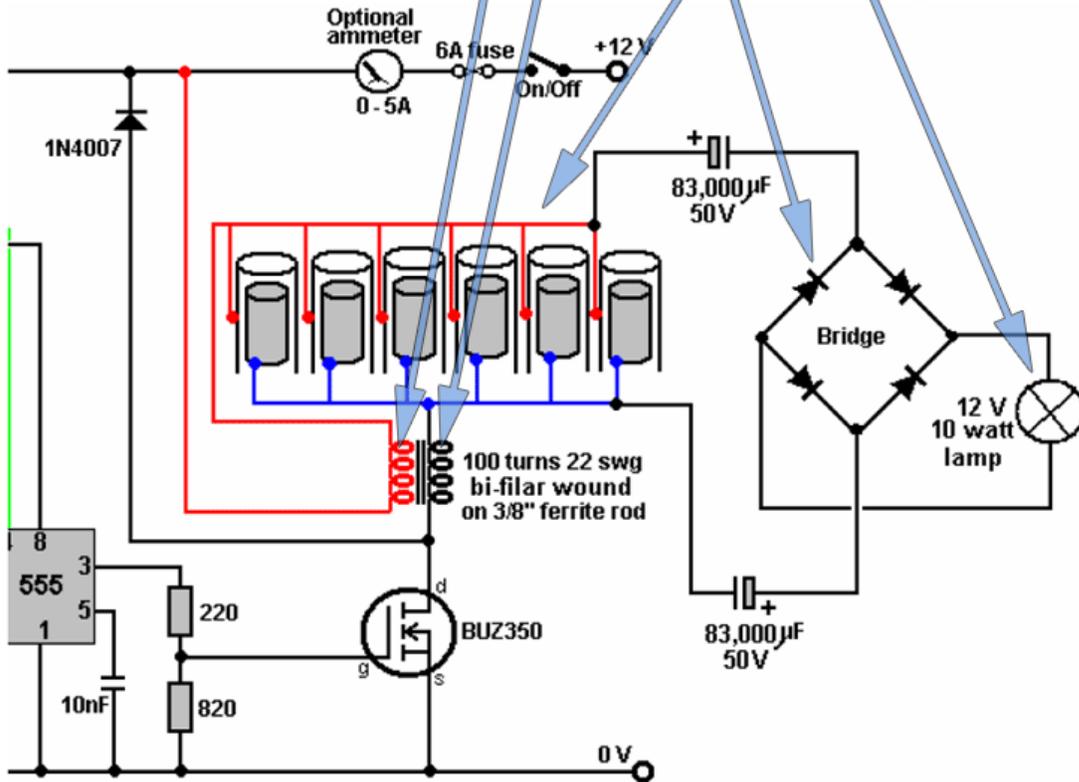
Analogy of the cold current circuit by Tao

Meyer's EEC circuit layouts compared to Lawton's recently posted EEC circuit that he is using to power that light bulb, among other loads. In the first image, Meyer's simple EEC is shown. In this setup, the 'amp consuming device' is analogous to Lawton's light bulb. When the water in the WFC is being split, electrons are dislodged from the water and as successive positive pulses happen the electrons are effectively 'sucked up' by the amp consuming device.

Stan Meyer's Electron Extraction Circuit Setup



Dave Lawton's Electron Extraction Circuit Setup



So, there are electrons in the water free, and when a positive pulse comes, the electrons move to the right electrode and move through the 'amp consuming device'. In the second image, Meyer upgraded his setup and included a triggering mechanism whereby he can choose when he applies the positive pulses to the 'amp consuming device'. So Meyer could send some pulses to the WFC plates and split up the water, then he could trigger the switch and send pulses to the 'amp consuming device' whereby the electrons from the water would flow through it.

Lawton on the other hand, has modified Meyer's EEC a bit with the addition of those extra high capacity caps. These caps would, by thinking about it, charge up via the continued HV pulses that are being applied to the WFC, analogous to a Bedini type setup. The electrons would then move to and from the caps and cause fluctuating current to hit the bridge rectifier and power his load. All in all, it seems there can be many different ways to implement the EEC.

Anomalies

Dave had mentioned some time ago that there's some glow in the dark. Ravi checked it in pitch dark and there is some kind of orange glow coming from the bottom of the WFC but can't make out exactly from where. He tried taking pictures but didn't work they got all pixilated.

Panacea Endorsed Supplier of cells and components

<http://www.thehydrogenshop.com/>

<http://www.courtiestown.co.uk/batteries/shop.htm>

Metal supplies

<http://www.speedymetals.com/> (304 SS only)

<http://www.onlinemetals.com/>

Tubing

<http://www.sisweb.com/vacuum/sis/steelhos.htm>

<http://www.harvel.com/piping-clear-pvc.asp>

Related Links

<http://jnaudin.free.fr/wfc/index.htm>

http://waterfuel.t35.com/wf_meyer_ravi.html

<http://www.hotlinkfiles.com/browse/srawofni/33693>

or

<http://www.hotlinkfiles.com/browse/waterfuel/42765>

(Plans and related info in the above links)

Related Ravi Technical discussion

<http://www.oupower.com/phpBB2/viewtopic.php?t=1602>

<http://www.overunity.com/index.php/topic,3079.0.html>

<http://www.energeticforum.com/renewable-energy>

Videos

Ravi's Youtube Channel: