

Make Your Own Colloidal Silver - Multiple Methods

Basic and Powerful method by Steve Cox

I discovered a simple addition that makes everything else fall neatly into place for the Alternative Medicine Research Foundation's original colloidal silver generator design: Saran Wrap!

Placing Saran Wrap over the top of the container and poking it down into the water in the middle prevents over-spray from reaching the clips and has the additional benefit of limiting open air contact during the electrolytic process. With the addition of this final piece to the puzzle, I believe we have a completed colloidal silver generator design that guarantees consistent results with no undesired side-processes occurring.

A picture is worth a thousand words, as they say, so I have prepared five images, labeled with explanations and instructions as necessary. I think you'll find the overview pictures below especially useful in making all this clear to the potential builder.

	
<p>I bought two 1 oz. solid silver bars from a coin dealer. They are marked Nemo's and stamped .999 FINE SILVER. These bars cost me about \$13 for both, including tax.</p>	<p>Here's how I bent the silver bars so they would fit on the side of the vase I use to make our colloidal silver.</p>



Here's what the silver bar looks like when it's properly bent and placed on my colloidal silver generator.



Using Saran Wrap to cover the top of the container prevents moisture from reaching the clips and thus becoming part of the electrolytic process. This simple addition assures you of pure colloidal silver.



Here's a complete overview of Steve Cox's variation of the Colloidal Silver Generator first developed by The Alternative Medicine Research Foundation.

Simple and Powerful Method by Dr. Jon Brooks

1. Buy a 6 volt DC transformer for about 5 clams. Better yet, pick up one at a flea market for fifty cents. The current doesn't matter as this method uses less than one ma. Regarding the size of the little wall transformer, Radio Shack has 300 ma. and 800 ma. The maximum current our process uses is 1/2 ma. so any will do just fine. We are beginning to receive many reports of efficacy for all kinds of problems. There is no down side risk in these concentrations. One can use four 1.5 volt flashlight batteries in series. They will last a long time.

2. Clip the connector off the end of the wire.
3. Get two alligator clips from Radio Shack for a buck.
4. Carefully separate the two wires. Strip the insulation off for about 1 inch.
5. Connect each lead to the clip.
6. You need two electrodes. Don't waste \$15.00 for 1/4 oz. pieces of silver wire. Go to a any coin store and buy two Canadian Maple Leafs for about \$6.50 ea. Each has 1.2 oz. of .9999 pure silver, enough to make more CS than you will ever use.
7. Buy a gallon of distilled water for about seventy cents.
8. Buy a tiny fish tank bubbler machine for about eight bucks. They will have the neoprene tubing as well. You will need about two feet.
9. Be sure the coin is squeaky clean. Clamp them to opposite sides of an 8 oz. glass of distilled water.
10. Place the tubing to the bottom of the glass.
11. Fill the glass with distilled water ONLY up to the bottom of the clips. One does not want the metal, from the clips, in contact with the water, only the coins.
12. Plug in the little transformer and oxygenation machine.
13. Run for about five hours.
14. Carefully remove the coins. There will be residue on them and you don't want that in the solution. For even more purity, use the neoprene tubing and siphon the solution into a clean glass/or plastic container. (In these parts a siphon hose is referred to as an "Arkansas credit card".)
15. Keep the CS out of sunlight in an air tight bottle.
16. Clean the coins thoroughly preparing for the next batch.

Low Voltage Colloidal Silver Generator with Mechanical Stirring

These are some of the best instructions I have seen to build a colloidal silver production vessel. I found them on a long forgotten website and they have served in good stead in my quest to produce high quality low voltage direct current (LVDC) colloidal silver. The design incorporates "Ole Bob's" concept of constant stirring. Use whatever your chosen power source is to generate the CS ie: 3 - 9 volt batteries, wall wart, etc.

Materials:

- § 1 each Wide Mouth Quart Mason Jar
- § 1 each Plastic Wide Mouth Lid (from a Miracle Whip jar or from Ball or Kerr)
- § 1 each 0-5 milliamp DC Gauge (good one is the Shurite #8302Z) or multimeter if you have one
- § 1 each RS (Radio Shack) 1.5-3.0 Volt DC Motor (P/N 273-223).
- § 1 each 2-3 inch piece of wire insulation stripped off of a piece of 14 gauge electrical wire
- § 2 each RS 75 ohm Chassis Mount TV Coax Connectors (P/N 278-212)
- § 1 each RS "D" Cell Battery Holder (P/N 270-403A) to power the stirring motor
- § 1 each RS Mini-Volume Control Potentiometer (P/N 271-215B) to control the speed of the stirring motor
- § 1 pkg RS 14" Jumper Leads Pkg of 10 (P/N 278-1156C) to connect everything
- § 3 each 9 volt alkaline batteries (if that's what you want to use to power it)
- § 2 each .999 or .9999 12 or 14 gauge silver electrodes. Keep them at least 3/4 inch away from the bottom of the jar (vessel)
- § 2 each RS 9 Volt Battery snap connectors to connect to the batteries.

Install the 2 Chassis Mount TV Coax Connectors in the lid so that the electrodes are about 1 to 1 1/4 inch apart (sort of off to one side of the top of the lid -- remember you also need room for the stirring motor).

Install the Stirring Motor in the lid (I used hot glue gun) so that a 2 inch or so piece of wire insulation, off of a piece of 14 gauge electrical wire, can stir freely without hitting the electrodes. It will take trial and error to determine where to place the Motor and how long to make the stirrer (the stirrer slides conveniently right onto the shaft of the RS motor).

You now have your version of a CS Production Vessel.

Use the Jumper leads to attach the "D" Cell battery holder with battery (put the potentiometer in the circuit to control the speed of the stirring) to the two connections on the stirring motor. You are now the proud owner of a working CS stirrer!!

Use more Jumper leads to attach the Power Source (3-9 volt batteries) to the two electrodes. Include the 0-5 DC milliamp gauge or a multimeter into the circuit so you can read the Initial Resistance and then the final resistance when the CS is done. When you first put the Distilled Water into the vessel, the Initial Resistance should be about 1/2 milliamp or lower, depending on how pure your DW is. Run this setup with the stirring motor stirring the DW until the voltage is between 2.6 and 2.8 milliamps or so. It should take about 4 hours. I don't have any idea what the PPM of silver this mixture has, but it has worked wonders on many different conditions. The CS should be clear.

I am not an electrician or an engineer. I post this for informational purposes only and do not remember where it was originally posted. Use this information at your own risk!

[Four nine volt batteries can be used as well in this design. We found that utilizing the stirring device to control the current was a novel idea]

Colloidal Silver Generator II - Batteries Not Required

This AC powered colloidal silver generator II makes the ionic silver solution. AC powered generators produce colloidal silver solution with more silver particles than silver ions. So, based upon the foremost research studies, AC produced colloidal silver is supposed to be of higher quality. This unit produces a quart of the solution in 30-60 minutes depending on the voltage and amperage of the adapter.

This design is easily constructed at home for under \$20, as it uses a recycled AC adapter for power. This design is simpler and more efficient than the original generator design, but not as refined as the new Colloidal Silver Generator III. The AC adapter (110V-32V/.5amp) can be easily found at garage sales, thrift shops or even in your own junk drawer. This is very economical as costly 9V batteries are not needed. This design makes a higher grade of the solution, faster, more consistently, and in larger quantities.

Historically speaking, silver has been used to treat a variety of conditions including: fungus, viral and bacterial infections and burns. It "reportedly" works by interfering with the respiration of pathogenic organisms. It is used both topically and internally; by drinking, applying to the skin,



or swishing under the tongue (sublingually). Even small amounts of colloidal silver solution can kill 100% of bacteria and viruses quickly when added to samples of heavily polluted water.



Colloidal silver solution "reportedly" bolsters our immune system while dispatching single celled organisms. Because this solution is 100% lethal to pathogens, it does not create more resistant varieties like antibiotics. Applied to burns it accelerates healing and new cell growth. It can be sprayed from an atomizer on skin, or into the mouth and throat. It can also be used on infants, children and pets.

Supplies You will need to make this colloidal silver design:

- o AC adapter (mine was from an old HP 540C printer 30V/.5amps). This one seems ideal, but any 110AC adapter within an output range of 24V-36V/ at .5 amp to 1 amp will work.
- o distilled water
- o 1 quart mason jar - two wires, coins or bars of 99.99% pure silver (sources below)
- o wood or plastic stir stick
- o wood glue
- o two small alligator clips, from Radio Shack
- o small button toggle safety switch, from Radio Shack (not shown)
- o small wooden base (4" x 8" or so)
- o multi tool or Swiss army knife (to cut and saw with)
- o thin wooden strips (for top cross piece to hold the silver wires)
- o plastic lid (as a base for Mason jar)
- o large rubber band or elastic cord (to secure AC adapter to base)
- o Funnel to transfer the silver elixir into storage bottles
- o scotchbrite pad for cleaning silver wires after each use
- o an optional aquarium air pump, to agitate the solution during electrolysis.

Making the Generator:

1. Cut wooden base to fit AC adapter, and Mason jar. Drill holes to secure adapter to base
2. Cut wooden cross bar that fits top of Mason jar (1" wider than jar mouth)
3. Drill two holes one inch apart in the center of cross bar (to hold silver wires). These should be just slightly larger than diameter of silver wires.
4. Glue two small wooden pieces to opposite ends of wooden cross bar, so bar fits snugly onto top of Mason jar. (you can turn jar upside down on top of the cross bar to glue the ends so the fit will be exact).
5. With the adapter unplugged :-) cut the AC adapter cord's plug (cut the low voltage wire end, not the wall plug end) and leave about one and one half feet of wire intact.
6. Strip about 1/2 inches off of the cut wire ends.
7. Attach alligator clips to the wire ends and crimp with pliers to secure them.
8. Install safety switch and/or a small light bulb* to wire between alligator clips and the AC adapter (not shown in photos, as I use a surge protector with a built in switch and light).
9. Assemble generator as shown in the photo below:
10. Fill mason jar with distilled water 1/4" to 1/2" from the top.
11. Attach the 2 alligator clips to silver wires ends sticking up from the cross bar, and slip them through the drilled holes in the jar's wooden cross bar.
12. Plug in the AC adapter to wall outlet. You are ready to begin making colloidal silver solution.
13. Throw switch while muttering "It's alive... it's alive" like Doctor Frankenstein.
14. Set a timer for 30 minutes, stirring every 30 seconds or so with a chopstick or other non-conductive swizzle stick. This increases the production of the beneficial silver ions and reduces white scale and black silver crystals (which you don't want in the final product). Tiny fizzy bubbles will start to form after a few minutes on one pole. A flashlight beam helps to see this. After process is completed, strain mixture through a non-bleached coffee filter or cotton cloth to remove any crystals or scale. Store the elixir in a dark glass bottle in a cool place. This will keep for several months, but it is best to make small quantities and use when fresh.
15. Wash mason jar after every use, then rinse with distilled water. Clean silver wires with scotchbrite pad to remove scale and silver crystals.

To increase the quality of your colloidal solution, you can use an aquarium air pump with a short hose to agitate the solution. Experts agree that this helps make the best quality solution.

The usual dosage is 1-2 tablespoons twice per day. Some people claim that their intestinal flora can be disrupted by colloidal silver. I haven't had a problem with this myself. But if this happens to you, it is best to swish it around the mouth and/or gargle the solution and not swallow. This allows absorption of beneficial silver ions through the mucus membranes (sublingual absorption). Eating yogurt several hours later will replace any friendly bacteria lost.

Many alternative health sources "claim" that colloidal silver offers some protection from air or water-borne viruses and pathogens (such as the common cold, flu, smallpox, anthrax, S.A.R.S., etc.) and recommend increasing dosage to one to two ounces, twice per day when symptoms appear. These sources state that one must take the solution for 5-7 days before full protection to take effect.

*An online reader suggested that a small light bulb be added in line as a safety feature, to show when contact is being accidentally made.

To get pure silver:

- § Canadian Maple Leaf coins - from any coin seller
- § two one ounce bars of 99.99% pure silver

Colloidal Silver DC Generator III - LW's new and improved Design

As each year goes by improvements in the process of making colloidal silver abound. The Colloidal Silver Generator III reflects these improvements over the Colloidal Silver Generator II.

The improvements Include:

- A 9v DC adapter / 300mA - 500mA (used to charge batteries) instead of the 36volt/.5 Amp AC adapter. The DC unit produces a greater quantity of silver ions and fewer silver particles than the AC powered unit. Researchers disagree as to which is better: smaller but more abundant more silver particles, or more silver ions. Both occur during electrolysis, but vary as to AC or DC current.
- A small aquarium pump to agitate the solution as it is being electrolyzed. This is easier than stirring continuously, and radically improves the ppm.



Making the Colloidal Silver Generator III

Supplies You will need to make this new colloidal silver design:

- o a DV adapter (9V/ 300mA-500mA). Available at Radio Shack for about \$5. I got several for .25 cents each at a thrift shop.
- o distilled water
- o 1/2 quart mason jar
- o two 99.99% pure silver wires , coins, or bars
- o aquarium air pump (often found at thrift shops)
- o two insulated alligator clips, from Radio Shack
- o small wooden base (4" x 8" or so)
- o saw or Swiss army knife for cutting wood strips
- o wood glue for jar top
- o electric drill and bit
- o plastic lid (as a base for Mason jar)
- o large rubber band or elastic cord (to secure DC adapter to base)
- o wood scraps to make jar cap/wire holder

Additional supplies

- o Surge protector strip with on/off switch. So you can turn on DC .adapter and air pump at the same time.
- o Funnel to transfer the silver elixir into storage bottles

- o scotchbrite pad for cleaning silver wires after each use

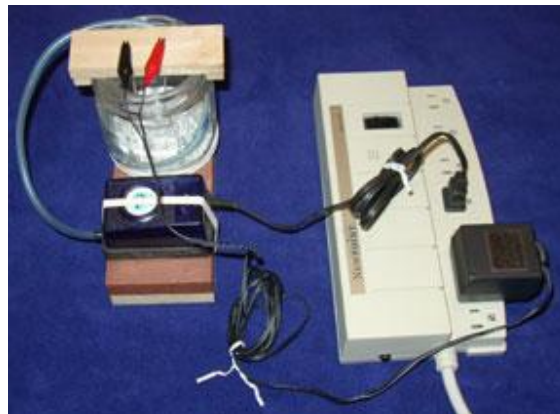
Making the Generator

1. Cut wooden base to fit DC adapter, and Mason jar.
2. Cut wooden cross bar that fits top of Mason jar (1" wider than jar mouth)
3. Drill two holes one inch apart in the center of cross bar (to hold silver wires). These should be just slightly larger than diameter of silver wires.



4. Glue two small wooden pieces to opposite ends of wooden cross bar, so bar fits snugly onto top of Mason jar. (you can turn jar upside down on top of the cross bar to glue the ends so the fit will be exact). Note: To use silver bars or coins instead of silver wire electrodes, this design must be modified. I suggest permanently attaching the alligator clips to the side of the wooden crossbar, with the clips pointed down (1/2" below bottom of the crossbar). In this way you can attach any silver coin or bar to the alligator clips.
5. With the adapter unplugged :-) cut the DC adapter plug (cut the low voltage wire end, not the wall plug end) and leave most of the wire attached.
6. Strip about 1/2 inch off of each of the cut wire ends.
7. Attach alligator clips to the wire ends and crimp with pliers, or solder to secure them.
8. Install safety switch and/or a small light bulb* to wire between alligator clips and the AC adapter (not shown in photos, as I use a surge protector with a built in switch and light).
9. Assemble generator as shown in the photo below. Make sure that the air pump is rubber banded to the base, or it will vibrate off. :
10. Fill mason jar with distilled water 1/4" to 1/2" from the top.
11. Attach the 2 alligator clips to silver wires ends sticking up from the cross bar, and slip them through the drilled holes in the jar's wooden cross bar.
12. Plug in the AC adapter to wall outlet. You are ready to begin making colloidal silver solution.

13. Throw switch on the surge protector while muttering "It's alive... it's alive" like Doctor Frankenstein.
14. Set a timer for three to four hours minutes.
15. Make sure that both the pump and the DC adapter are working. You can hear the pump, but might have to test the DC output with a voltage tester.
16. The bubbler enhances the quality of the silver solution and reduces white scale and black silver crystals (which you don't want in the final product). Tiny fizzy bubbles will start to form after a few minutes on one pole. A flashlight beam helps to see this.
17. After process is completed, strain mixture through a non-bleached coffee filter or cotton cloth to remove any crystals or scale. Store the elixir in a dark glass bottle in a cool place. This is reported to keep for several months, but it is best to make small quantities as needed. Fresh is best.
18. Wash mason jar, and air pump tube after every use, then rinse with distilled water. Clean silver wires with scotchbrite pad to remove scale and silver crystals, then rinse. Dry then store all components of the generator together in a dust-proof tupper or container.



The Generator III hooked up to surge protector.

Dosage

The usual dosage is 1-2 tablespoons twice per day. Some people with touchy stomachs claim that their intestinal flora can be disrupted by colloidal silver. I haven't had a problem with this myself. But if this happens to you, it is best to swish it around the mouth and/or gargle the solution and not swallow. This allows absorption of beneficial silver ions through the mucus membranes (sublingual absorption). Eating yogurt several hours later will replace any friendly bacteria lost.

Alternative health sources "claim" that colloidal silver offers some protection from air or water-borne viruses and pathogens (such as the common cold, flu, smallpox, anthrax, S.A.R.S., etc.) and recommend increasing dosage to one to two ounces, twice per day when danger or symptoms appear. These sources state that one must take the solution for 5-7 days before full protection to take effect.

*An online reader suggested that a small light bulb be added in line as a safety feature, to show when contact is being accidentally made.

To get pure silver:

- § Canadian Maple Leaf coins - from any coin seller

§ two one ounce bars of 99.99% pure silver

Additional Suggestions From Readers:

Firstly, I prefer a 1 quart glass mayonnaise jar with a plastic top, I'd be a little concerned about the metal top of the mason jar leaching into the silver water, just my opinion.

My preference for the alligator clips are the plated or stainless steel type to prevent copper from leaching into the water if splashed.

Mentioned in the article but not shown in the picture: you should add a fish tank 'bubbler' with tubing, to the system to keep mixing the solution while the added oxygen from the bubbler helps to keep the particles small. Some brewers actually add oxygen drops to the solution to break up the silver particles, so the added oxygen brought in by the bubbler is an added bonus, not to mention the mixing action that it provides. Larger particles can not be absorbed into the blood from the lining of the stomach so it is important to keep the silver particles as small as possible. Only the smallest particles are effective against viruses and many bacteria as well.

As far as the electrodes go, I prefer using 2 Canadian Maple leaf silver \$5 pieces placed about 1.25" apart. They are graded at .9999% silver and will last for ever. I buy them un-circulated and sealed in plastic by the mint, from a coin dealer in my area for about \$7 or \$8 ea. They have much more surface area than the silver wires so more is available to conduct electricity and drop silver particles into the solution. You can either drill holes through the top of the plastic jar-cover and clip into place from the outside (so clips don't come into contact with water). Or as I recently did - drill small holes through the tops of the coins and run .9999 silver wires through and stick through the jar cover to clip leads to. The coins will hang from the wires into the water. Using silver wire to hang off of allows the coins to be almost completely submerged (more surface area). Be sure coins are secured so they do not touch together and short your circuit causing the power supply to blow out.

When colloidal silver starts brewing in the distilled water, the water has very little conductivity and the particles break off in very small sizes (most useful to the body). As silver starts getting into the water, the water becomes much more conductive and the particles start getting larger and larger as the water becomes more conductive, until you can actually see the particles and they can become huge which are totally useless to the body, they call this silver mud (something you don't want).

You need a way to monitor this and control the current. Using the plan shown on the link, it is good to add an amp meter or digital multi-meter that can be purchased at Wal-Mart for about \$17. Just connect it in series with the positive lead of your CS generator. this can also act as a circuit breaker in case you accidentally hit the 2 leads together. When you start the brewing process your distilled water will probably read about 100u-amps (1/10 of a milliamp). You will see the numbers on the amp meter rise as micro particles of silver drops into the solution and the water becomes more conductive to electricity.

As the conductivity rises and the numbers go up on the meter, your particles will also get larger. You need to add a current limiting device to the circuit. A potentiometer or variable resistor works okay, but has to be monitored and manually adjusted to keep the current down.

You can automatically control the current by adding a 'current limiting diode'. Insert the diode in series with the positive lead of the CS generator (anode), be sure that the little stripe on the

diode is pointing toward the power supply side of the circuit and not toward the electrode or alligator clip leading to the electrode.

Using the current limiting diode will allow the current to maintain at a set amount. Many people that brew their own CS, limit their current to stay under 1 ma. I've done a lot of experimenting and actually prefer keeping the current much lower, around max .28 milliamps, using a 30VDC power supply. This keeps the solution crystal clear, which tells me that the end product has extremely small particles. There is a slight metallic taste. You know the CS is there because when the solution is done, if you temporarily bypass the diode you will see the water conductivity is now about 1.2 milliamps, 10Xs greater than at the start. Results confirmed with a PWT meter (more about this later).

You can purchase various 'current limiting diodes' to keep it at 1 milliamps, .5 milliamps, or less, and experiment for yourself. When I run at a 1 milliamp limit, I find some larger particles that I end up having to filter out with an unbleached coffee filter. If not filtered these particles will probably just drop out of solution after being refrigerated for a couple of days, as they are actually not colloidal. The lower current prevents the need to filter and lessens the chance of adding contaminants or paper dust to the solution.

I had trouble finding these diodes at Radio Shack. I got the best price from Mouser.com and the service was great. I plan to build my Auto-Godzilla getting most of the parts from Mouser as well. Here is a catalog link for the current limiting diodes from mouser. Tip: odd numbers same money - a 1ma limit diode is \$4.29 whereas a .91ma diode is only \$1.78.

<http://www.mouser.com/catalog/622/287.pdf>

A home built CS generator works best with everything plugged into a power strip with its own built-in circuit breaker, plugged into a grounded electric timer. Most exterior type timers are grounded. The timer allows you to set it and forget it once you experiment and find out how long your brewing times should be to get the desired results.

To estimate your silver content in solution, you can find a TDS (total dissolved solvents) meter on eBay for about \$10-\$15, these test silver ions, not particles. Also Hanna has a good meter called a PWT meter (pure water tester), that can be purchased online for as low as \$55. The PWT tests conductivity of water and may be better to test actual particle content rather than the TDS meter.

Colloidal Silver Solar Generator - LW's new sun-powered design

Well here is another CS generator using six small recycled solar cells (I just can't stop myself :o)

The cells were salvaged from a set of old solar path lights that I got free at a garage sale. Each cell puts out about 4.2 Volts DC. So I soldered the wires together (+ to -) in series, and the little guys puts out a respectable 28-32 Volts at .4mA. 30v is the recommended voltage for making colloidal silver, as it generates minimal scale and silver crystals, and keeps the silver wires clean during the process.

The Colloidal Silver Generator IV requires several hours of direct sunlight (3-4) to produce a good batch of CS. Make sure that your cables are long enough to locate the mason jar in a dark place

(inside, or in a box) while the solution is being made. Sunlight degrades colloidal silver solution. An opaque glass jar would work too.

Use a high grade of distilled water: no ionized or mineralized drinking water. Stir frequently, or use an aquarium bubbler to agitate the solution. Follow the same procedures and precautions as are detailed in the other three generator designs.

Making the Colloidal Silver Generator IV - Sun Powered

Supplies You will need to make this new colloidal silver design:

- o a small commercial solar panel, or salvaged solar cells.
- o extra insulated wire and alligator clips for hooking up solar cells/panel
- o a soldering iron and some solder (silver solder is best)
- o a plywood base for silicone gluing the cells into place
- o some scotch tape (to temporarily hold cells in place while assembling)
- o high quality distilled water
- o 1/2 quart mason jar
- o two 99.99% pure silver wires or silver coins
- o wooden chopstick, or an aquarium air pump (often found at thrift shops) for agitating the solution
- o two insulated alligator clips, from Radio Shack
- o saw or Swiss army knife for cutting wood for cap and base
- o wood glue for jar top
- o clear silicone adhesive
- o electric drill and bit
- o plastic lid (as a base for Mason jar)
- o wood scraps to make jar cap/wire holder





Additional supplies

- o Funnel to transfer the silver elixir into storage bottles
- o scotchbrite pad for cleaning silver wires after each use

Making the Generator from individual cells (#1 to 11 are optional if you are using a store-bought panel)

1. Cut wooden base to fit solar cells (add an extra inch or so if you are going to frame the base to protect the cells).
2. Cut wooden cross bar that fits top of Mason jar (1" wider than jar mouth), and two small end pieces.
3. Drill two holes one inch apart in the center of cross bar (to hold silver wires). These should be just slightly larger than diameter of silver wires used.
4. Glue the two small wooden pieces to opposite ends of wooden cross bar, so bar fits snugly onto the top of Mason jar. (you can turn jar upside down on top of the cross bar to glue the ends so the fit will be exact). A slight twist tightens the cap on the jar if you glue them on the narrowest thread area.
5. Cut some thin wooden strips to make frame to protect cell array.
6. Tape the cells face down on the plywood base temporarily for positioning
7. Wire all of the cells together and solder the twisted ends together.
8. Turn the assembly over gently (another piece of plywood helps - make a plywood and solar cell sandwich. Then gently pry the cells away from the board they are taped to. They will be right-side-up now.
9. Test the solar panel to make sure all of your soldered connections are good.
10. Glue the protective frame onto the wooden base. You can also glue an optional piece of Plexiglas on top of the frames to completely seal in, and protect the panel.
11. Use the tube of silicone to glue the cell array to the base. Take care to keep everything together.
12. Strip about 1/2 inch off of each of the long cable cut wire ends.
13. Attach alligator clips to the wire ends and crimp with pliers, or solder to secure them.
14. Install safety switch and/or a small light bulb* to wire between alligator clips and the AC adapter (not shown in photos, as I use a surge protector with a built in switch and light).
15. Assemble generator as shown in the photo below. - You are done!

Making the colloidal silver solution

1. Fill mason jar with distilled water 1/2" from the top.
2. Attach the 2 alligator clips to silver wires ends sticking up from the cross bar, and slip them through the drilled holes in the jar's wooden cross bar.
3. Place the solar generator into the sunlight. You are ready to begin making colloidal silver solution.

4. Set a timer for three to four hours. Turn on the bubbler or start stirring with the chopstick.
 5. To make sure that panel is working, you could test the DC output with a voltage tester.
 6. You can test the concentration of the solution with a laser pointer, the silver particles will reflect the coherent light in a cone shape after the first hour, this will increase until target concentration is reached.
 7. The solution should be clear, or a very light yellow color when done.
 8. After process is completed store the elixir in a dark glass bottle in a cool place. This should keep for a couple of months, It is best to make small quantities as needed. Fresh is best.
 9. Wash mason jar, and air pump tube after every use, then rinse with distilled water. Clean silver wires with scotchbrite pad to remove scale and silver crystals, then rinse. Dry then store all components of the generator together in a dust-proof tupper or container.
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Warnings - AMA Disclaimer

This device is meant to produce colloidal silver solution, which is a "mineral supplement". We make no claims about it as an antibiotic or as a curative agent.

- § Some individuals report disruption of friendly flora and fauna after ingesting colloidal silver. For those who are gastrically sensitive to colloidal silver; handbooks recommend gargling colloidal the solution without swallowing, to protect friendly intestinal bacteria (many silver ions are absorbed through mucus membranes of the mouth during gargling). The eating of organic yogurt is sometimes recommended to replace friendly intestinal bacteria.
- § High dosages of colloidal silver over an extended period of time are not recommended, as these can cause the buildup of silver residue in the joints, gums and eye whites. But when we consider the dreadful toxicity and side effects of pharmaceutical antibiotics, colloidal silver's side effects are minor by comparison.