



instructables

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## How to Make a Lichtenberg Burner With a Microwave Transformer



by thomsenemily99

Lichtenberg figures are formed when high voltage electricity passes along the surface of an insulated material. You can use a microwave transformer to build a machine that will produce Lichtenberg figures.

Materials:

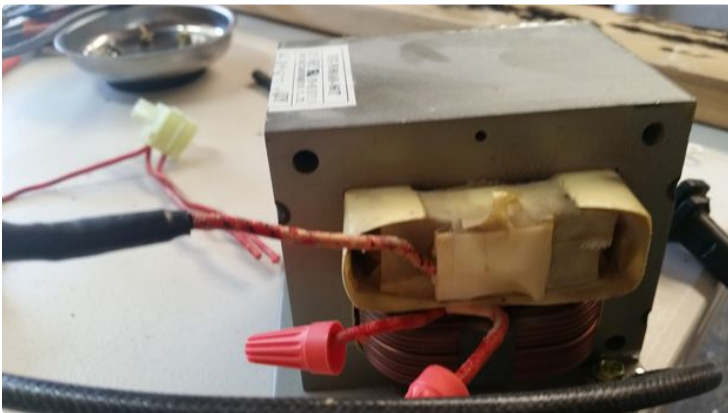
1. Microwave
2. drill
3. pliers
4. switch
5. wire cutters
6. wire nubs
7. electrical solder
8. soldering iron
9. heat shrinks
10. heat gun
11. file
12. short screws
13. washers
14. lugs
15. baking soda
16. water
17. wood
18. wires
19. 15,000 volt GTO wire
20. heavy clamps
21. two copper or brass rods
22. wire crimp
23. connectors



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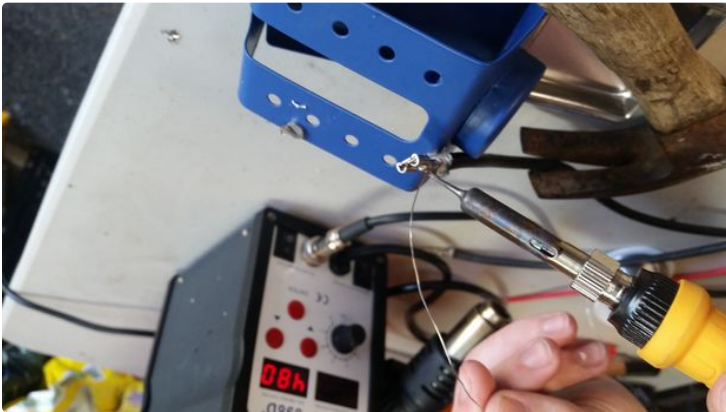
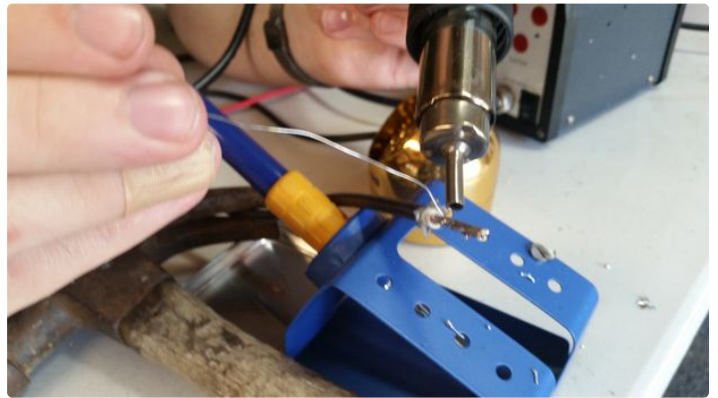
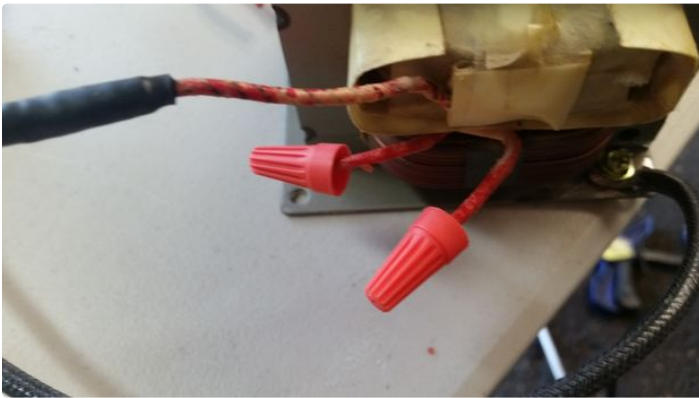
### Step 1: 1. Disassembling the Microwave

1. Take the back and the bottom of the microwave off with a drill
2. Disconnect the microwave's capacitor with pliers
3. Find the transformer, disconnect the wires that are attached to the microwave without cutting them



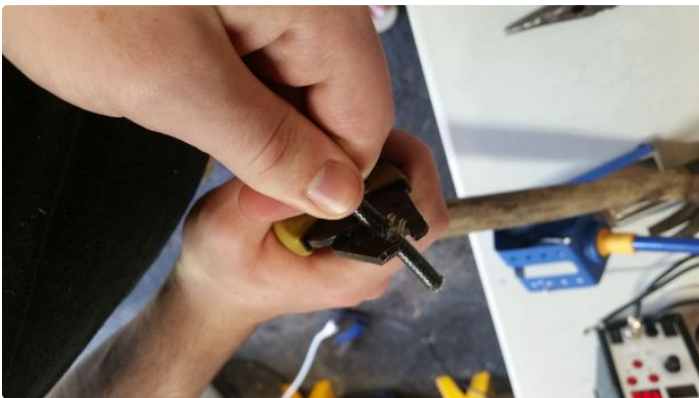
## Step 2: 2. Hooking Wires

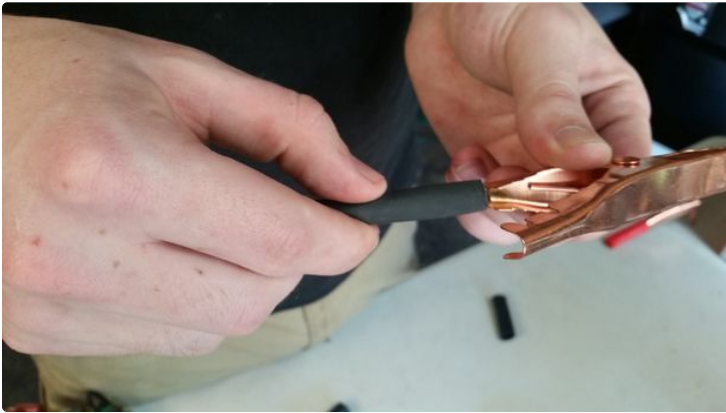
1. On the bottom of the primary winding there are two connectors. That is where the power chord will connect.
2. On the other side on the secondary winding there is one connector. That is one of the leads that will go to the board.
3. The other lead will come from the ground at the base of the unit.
4. The two long wires that stick out from the transformer will not be used. Cut them off an inch or two away from the unit and put wire nubs on the ends.
5. Next, the connections for the power supply that will go over the two connectors on the bottom of the primary winding need to be made. Solder the connection to a wire. Once done, press the wire with the connector into one of the connectors at the bottom of the primary winding. Put a heat shrink over the connector. Shrink the heat shrink using a heat gun that is set on low.
6. Repeat step five with the remaining connector at the bottom of the primary winding.



### Step 3: 3. How to Make Cables

1. Strip the 15,000 volt GTO wire using wire cutters about two inches from the end of the wire. Partially cut the wire through the insulation but not through the wire itself.
2. slide the handle grip off of the heavy clamps. Put a washer on a small screw, put the screw through the hole that is on the handle of the heavy clamps. Make a loop with the stripped part of the GTO wire and put that also on the screw. After that, put on another washer, then a lock nut. Screw together tightly.
3. solder the wire to the clamps.
4. Repeat steps 1-3 with a separate set of clamps and wire
5. Crimp the connector that will be a part of the ground to the end of the cable.
6. Solder around the crimp
7. Cover the crimp and the exposed wire with a heat shrink, use a heat gun to heat the heat shrink, repeat this step three times.
8. Repeat steps 5-7 with the other set of clamps and wire
9. Slide and shrink about four pieces of heat shrink around the exposed wire that is attached to the heavy clamps. Slide the handle grip back over the handle. Use a fifth piece of large, heavy duty shrink wrap and slide it over the handle grip and the other heat shrink. Heat the heavy duty heat shrink. Try to keep the wire as centered as possible.
10. Repeat step 9 with the other set of clamps and wire





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#### Step 4: 4. Hooking Leads and Cables

1. File down the ground hole on both sides to remove its protective coating
2. Connect the lead to the ground. Put one star washer on a short screw, then the terminal cable, then lace the screw through the ground hole, then put another star washer on the short screw, then a lock nut. Screw tightly. Put another lock nut on the screw, screw tightly.
3. Hook up the other terminal to the secondary unit.
4. Plug the wire that is connected to the primary winding into the switch



## Step 5: 5. Using the Lichtenberg Burner on Wood

1. Presoak the wood with a baking soda and water solution. Remove any excess water with a paper towel
2. Place a copper rod in between each of the heavy clamps. Sharpen the ends of the copper rods into points
3. Place the copper rods on the wood
4. Flip the switch on the transformer
5. Watch
6. When satisfied with the results, turn off the transformer. Then take the heavy clamps off of the wood



◦ Neat!

I watched the Mehdi Sagaghdar video on YouTube where he did this, but your one came first!

Thank you very much for sharing.