**Electroformed Copper Geode Ring**
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**Supplies Needed:**
- Wire or ring shank
- Epoxy
- Geode Stone
- KlayResin
- Conductive paint
- Controller or Rectifier for plating
- Copper electroforming solution
- Copper wire and anode
- Distilled water, paint brush, alcohol wipes

**Steps:**

1. Start with a wire ring blank or 24 gauge copper wire to make a shank for your ring. Size the ring blank or wire on a mandrel measuring about 2 sizes bigger than your ring size. Hint: if using copper wire wrap it around the mandrel twice and twist the ends together. Use a rawhide hammer to shape and work-harden the wire or blank.

2. Slice off a section of KlayResin to create a bezel for your stone. Mix the clay thoroughly. If the room is cold and humid you will have a LOT more time to work the clay before it cures.
3. Shape the mixed resin around the stone as desired. Press the ring shank into the clay on the back of the stone. Blend the bezel clay into the ring shank, smoothing the clay. Use water as needed to smooth the clay.

4. Slice off another section of KlayResin to cover the ring shank. Mix the clay thoroughly and shape it around the wires. Shape the ring shank to fit around your finger a little loose. As the clay starts to cure it will hold its shape better giving you more control on the form. There will be a point at which you can no longer work the clay. If the clay sets up before you are happy with the shape and size, you can cut the clay away with a sharp blade while it is still somewhat pliable. If you wait several hours, it becomes harder to cut and a day later it can be drilled or sanded away if need be.

5. The KlayResin must be completely cured before electroforming. This is important for two reasons: first the clay may react chemically and not plate properly if not cured. Secondly, the conductive paint may not adhere well and flake off during plating. Speed curing of the clay can be done with a dehydrator if needed before electroforming. Check the fit of the ring again. It should fit just a bit loose as the copper will add thickness to the final design. The clay can be sanded with fine sandpaper under water to smooth edges and refine before plating.
6. Hint: Some druzy stones are porous and will soak up the solution which will change the color of the stone. Other stones contain metal which will cause the copper to plate over the surface. To protect the stone in both instances, you can cover the stone with wax to protect it during electroforming. I use orthodontic wax from the drug store. I simply knead the wax to soften it and then apply it to cover the stone. To remove the wax after plating, simply peel it away. If you still have residue you can melt the wax by placing the ring on a metal screen suspended over boiling water with medium heat until it becomes liquid. Wipe the melted wax off with a paper towel and then clean the stone with rubbing alcohol.

7. Paint a thin layer of conductive paint to the surface of the clay you wish to plate. Touch up if needed to cover missed areas. Let the paint dry well. If the paint will not stick to the KlayResin, apply a layer of varnish prior to coating with conductive paint, which will help it to stick.

8. Wrap a copper wire around the ring shank. Remember you may need to move the wire during electroforming so a simple hook to hold the ring is sufficient.
9. Set up the rectifier or controller with clips as directed by manufacturer. For the E3 Duo Controller, turn on the power and current. Turn the current up to about 1A. Dip the ring into the copper plating solution using un-split chopsticks to suspend the piece in the solution from the conductor wire. As soon as you see that the piece is coated with copper (which should take about 10-15 minutes), turn the current down between .25 to .30 to finish plating. Electroform for several hours until desired thickness of copper is obtained. Keeping the current low will result in a smoother finish. Rinse the piece in distilled water after plating. Remember to always wear gloves with plating solutions.

Variation:
Instead of making a ring, try making a bail for a pendant.

1. Make a wire bail to attach to the top of the crystal. Wrap a copper wire (any gauge is fine) to form a loop for the bail and then wrap the wire a few times around the top of the crystal. Bury the wire that is wrapped around the top of the crystal with KlayResin to form a decorative top to the crystal at the base of the loop. Smooth the clay around the base of the loop.
2. You can push decorative glass beads or rhinestones into the surface of the clay if desire.

![Image](image_url)

3. Let the clay dry well.
4. Paint the surface of the clay with conductive paint. Avoid covering the glass bead and rhinestones or they will get covered with plated copper. Attach a conductor wire to the bail loop and try to extend the wire to touch the painted clay part as well for better conductivity.
5. Electroform the piece as directed in steps 8-11 for the ring.

   For supplies and full electroforming instructions, visit www.sherrihaab.com