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Overview

Light up the night with your own EL Bowtie. Using a simple 3D printed model, EL wire and some fishing line, you can add flash to any attire. No collars required.

This project is easy, replicable, and fun.

Parts You'll Need:

- EL Wire - any color, as long as it's solid (not stranded!)
- EL Wire Coin Cell Mini Inverter
- CR2032 Battery (the rechargeable one is great for this)
- Monofilament Fishing Line (I used 10lb. test): [Amazon](https://adafru.it/kzA)
- Metal scriber: [Amazon](https://adafru.it/kzB)
- Croakies: [Amazon](https://adafru.it/kzC)
- E6000: [Amazon](https://adafru.it/kzD)
- 3D Printer, and filament.
- Cloth adhesive (I used hot melt/glue gun)

Trick You'll Learn

How to apply a thin bead of E6000 using spare parts bags.
3D Printing

A 3D printer is pretty crucial to this project. If you've never printed anything before, this would be a good project to start with.

Printing with a raft is totally your choice, but I've found I have the best success with my Replicator 2 when there is one.

Click here to get the .STLs from Thingiverse
https://adafruit.it/kzE

Take your time when removing the raft. The cleaner you can remove the extra material, the less cleanup that's required. Since this print will be near skin, you'll want the bottom surface to be smooth and free of any jagged edges.
I used a scribe to widen the monofilament holes a little.
Next, print the inverter clip. I used black filament, to blend in with the inverter.

Now to move onto assembly!

Assembly

The EL Wire Coin Cell Mini Inverter will not light up the raw 2.5 meters of EL Wire. You’ll have to wait until you make the final cut to test the glow.
First, cut off the protective tip on the end of the EL wire.

Next, feed the entire length of EL wire through the large hole on the bowtie print.
Once the black fitting of the EL wire is up against the print, working clockwise, bend the EL wire into shape around the EL wire channel. Feed monofilament through the pairs of holes on either side of the wire channel, and tie them off into knots.
Once tied off, trim the excess monofilament.
To keep the EL wire in the right shape while tying off the filament, I used painter's tape to secure it to the print. This isn't required, but it saves some fiddling.

Once you've molded the wire to the bowtie shape, trim off the excess EL wire.

I then sealed the end of the EL wire with a dab of hot melt.

Do not touch the EL wire with the tip of the hot melt gun. Allow the glue to drip onto the tip of the EL wire.
Finish tying off the last monofilament knots to secure the EL wire to the bowtie.

Now you can plug in the EL Coin Cell Inverter, and test the circuit!
Inverter Clip

To attach the hanging clip for the coin cell inverter, I used E6000. It's an incredible adhesive. If you don't have any, pick some up. It's available just about everywhere in the US. I got mine from a local pharmacy.

**E6000 Tip - Use an extra plastic bag from Adafruit parts. Squeeze in some adhesive, seal the bag, cut off a corner, and apply your thin beads.**
Be mindful to not let any E6000 get into the margins of the rubber pushbutton. A toothpick, or scrap wire can scrap away any residue, it takes hours to set.

Strap

Using a knife of scissors, cut off the foam rubber tips of the croakies.
Being careful not to twist or further fray the tips, feed them through the loops on the edge of the bowtie print.

Using any adhesive (in my case, more hot melt), dab some glue to the ends of the croakies, and fold them back over onto the croakies. Squeeze until the bond is complete.
You're done!
Live Your Dreams!

Make one for yourself.

Make one for your brother too.
Battery Output

To increase the brightness, you could use a more powerful inverter. However, you wouldn't be able to comfortably hang it from the neck strap.

CR2032 batteries are pretty cheap and portable, so I just keep a few on me when I wear it to extend the blinking throughout the evening.