Electron Bow
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https://learn.adafruit.com/electron-bow

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Overview

Add a little TRON to your style with an easy-to-make light-up hair bow trimmed with EL wire. We'll show you two different sizes to suit your changing mood. You may want to read our EL wire tutorial (https://adafruit.it/cbA) first!

Portraits by Johngineer, project assistance by Risa Rose!
For this project you will need:

- clear thread
- sewing needle (http://adafruit.it/615)
- scissors
- french hair clip or headband
- 2.5 meters of aqua EL wire (http://adafruit.it/409)
- 1xAAA inverter (http://adafruit.it/1349) (for small bow) or 2xAA inverter (http://adafruit.it/545) (for oversize bow)
- wide velvet ribbon (for small bow) or large rectangle of woven fabric (for oversize bow)
- sewing machine (optional)
- fabric stiffener (optional)
We found it helpful to keep an inspiration board for this project, filled with pictures, sketches, and material swatches.
Construct Hair Bow

Quickstart!

For a hairclip-sized bow, grab a piece of wide velvet ribbon and follow our other hair bow tutorial (https://adafruit.it/cbo) to make folds in the ribbon. Fold over the raw end and cinch the center of the bow.

Stitch through all layers of ribbon and knot/cut your thread.

Use a smaller piece of ribbon or just another piece of the same ribbon, folded over itself to be thinner, to wrap the center of the bow.

At the back, place the small 1xAAA inverter and wrap the ribbon tightly to hold the inverter in place (but not so tightly that you can't slide it out to change the battery). Fold over the raw edge and stitch the center band ribbon in place with a whip stitch.
For a costume-sized hairbow, continue with the instructions below. It's also easier to show the project to you at a larger scale, so if the quickstart step above isn't detailed enough for you, read on for more in-depth instruction and tips for a scaled-up project.

Hem the long edges of a piece of woven fabric measuring ~13"x56". Fold in half with right sides together and stitch the seam.

Turn right side out and lay your new loop flat on the table/ironing board with the new seam positioned in the center.
Fold a hem along the edges of a smaller piece of fabric in proportion to the larger bow body as shown. Stitching this hem is optional and could help slippery fabrics to stay in place.
You’ll cinch and wrap the center of the bow, but to give it more body at the center, insert a small block of something lightweight but firm like styrofoam.

Arrange the fabric around the foam and use a needle and thread to stitch through all layers of fabric and foam. Tie off and cut the thread.
Wrap the cinched center with the smaller piece of fabric, and fold the ends to the inside at the back of the bow. Stitch in place using your favorite way— we used a whip stitch.
Depending on your fabric, you may wish to apply fabric stiffener to the bow.

Use your hands and/or a paintbrush and allow to dry overnight.
Lightweight, sturdy, ready for EL wire!

Add EL Wire

Thread a needle with invisible thread (very thin plastic filament)-- find it in the quilting section of the fabric/craft store. Tie both ends together several times to make a sizable knot-- otherwise it might pull through the fabric. Securing both tails makes it easier to keep track of the thread and prevent accidental unthreading, as the thread is hard to see!
Starting at center back and following the diagram below (click to enlarge), use a whip stitch to loop around the EL wire and secure it to the fabric of the bow along the edges.
To go around corners, make a sharp bend in the EL wire with your fingers or a pair of pliers.

When your thread gets short, tie it around the previous stitch and cut off the tail, then thread a new piece of thread and continue, hiding the knot where possible.

This bow has two spots where the EL wire overlaps (the top and bottom of the center band), it's ok to stitch it to itself.

Cut off the excess with a pair of snips, leaving a small tail to tuck behind the center band.
Plug in your inverter and test to see it working! Then turn it off, disconnect and get ready to attach the inverter to the bow.

The big costume bow needs the 2xAA inverter, but the smaller bow can be powered by our smaller 1xAAA inverter for less bulk on your noggin.

Remember not to leave your inverter running when there's no EL wire connected to it, or it could be damaged!

Route the wires behind the fabric of the center band, and apply a piece of velcro tape to the back of the bow and inverter.
You can sew the inverter for the smaller bow directly into the center band during construction.

Wear it!

Stitch a hair clip to the center band facing down-- the inverter will sit directly atop it. Use a little E6000 or hot glue here if you prefer not to rely on stitches alone.

The bigger bow needs a little more support: stitch it to a fabric-covered headband.
Clip around a small section of hair and then style as desired. We found this bow to stay put fabulously for hours.

The headband with larger bow may need some bobby pins to stay in place, depending on your headband and hair style, and will still then probably be slightly precarious. If you need stability, go with the smaller style bow.

This project would be suitable for a men's bowtie as well, consider our yet-smaller coin cell EL inverter (http://adafruit.it/1350)!

Don't submerge your hair bow in water! Spot clean if necessary, and take it off if you get caught in the rain.