2022-07-20 Qasim Qureshi & Eleonore Duvelle @ van der Meer lab

Guide: How to Make a Tetrode

1. Cut some copper tape into small squares measuring about ½ by ½ inch (1 per tetrode)

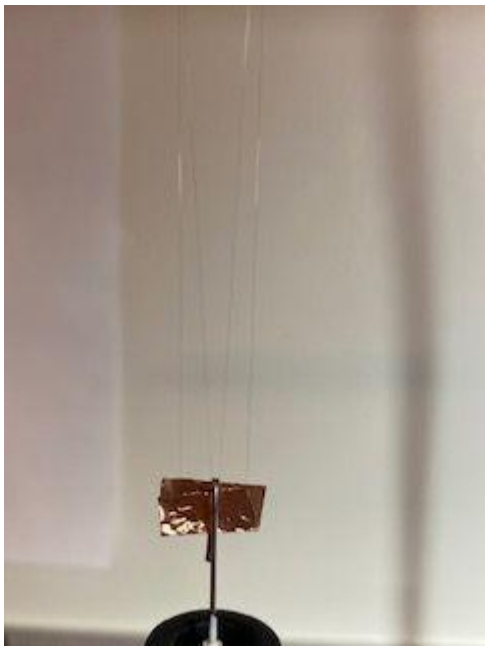
2. Pull some tetrode wire gently from the bobin with a tweezer (at all times, avoid touching it with your fingers)

3. Cut the wire to the specified length depending on the desired tetrode length

4. Tape both ends of the wire with the same copper tape to form a loop and fold the tape in half. Press on the tape (a lot) with the back of your thumb.

Note: wire traced in red for better visualization.

5. Hold the taped end and place the looped wire over a rod towards the free side.



6. Hook both ends of the loop at the bottom with a hook clip

7. Position the tetrode spinner so the clip lies within it. Do not let the wire slack, and do not pull on the wire.

8. Ensure the distance between the loop ends on the rod is equal to the width of the rod (¾ to ½ inch).

9. Spin according to the listed instructions.

10. Heat the tetrode with a heat gun at the appropriate temperature (……. – wire dependent) from three different angles and slowly move the heater up and down the wire. Avoid heating the loop. (approx. 10 seconds at each angle).

11. Lift the clip slightly to give some slack to the tetrode, cut above the tape.

12. With tweezers, grab the base of the loop and carefully lift/slide it off the rod.

13. Examine the tetrode under a microscope for abnormalities (for example, untwisting towards the end of the tetrode, bending in the tetrode, etc. Minor abnormalities near the loop are acceptable and normal. However, no abnormalities are acceptable anywhere else.

Unacceptable abnormality near the loop	Unacceptable abnormality near the end of the tetrode
	
Acceptable abnormality near the loop	Acceptable conditions near the end of the tetrode