

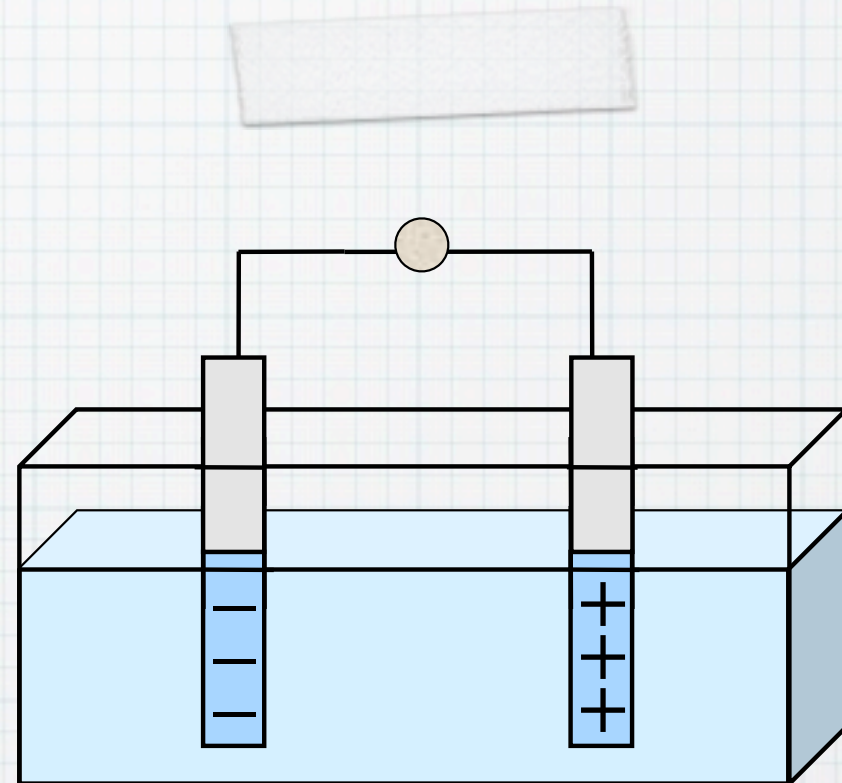
# Galvanic Cells

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# Overview

- \* "Cells" are containers of liquid with electrodes:





- \* In electrolytic cells, electricity is used to force chemicals to undergo a redox reaction**
- \* In galvanic cells, electricity is produced spontaneously from a redox reaction**



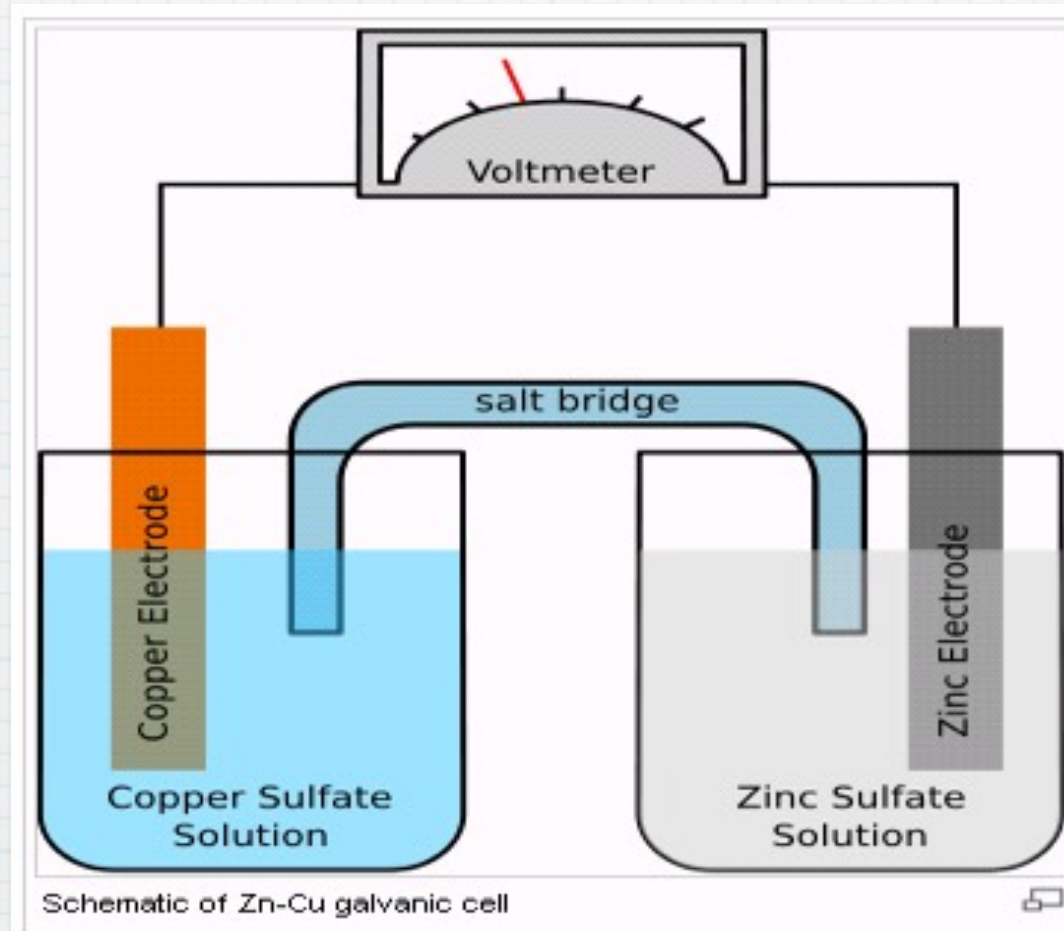
# Galvanic Cell

- \* An arrangement of two half-cells that can produce electricity spontaneously.



# Galvanic Cell

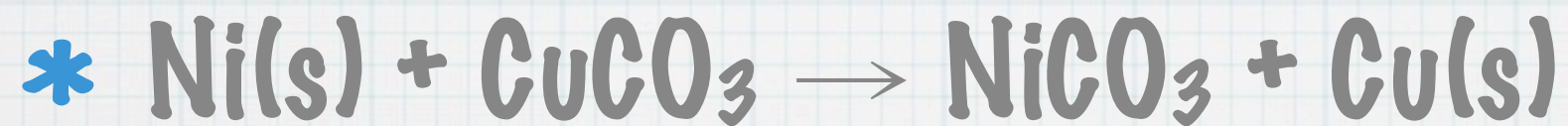
- \* An arrangement of two half-cells that can produce electricity spontaneously.





# Background

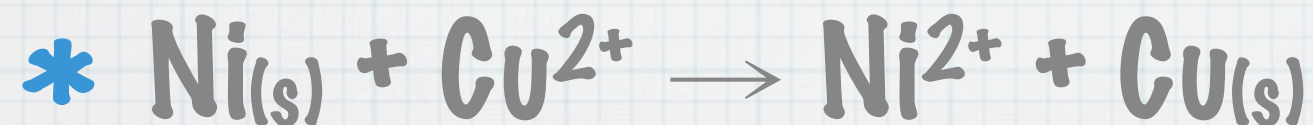
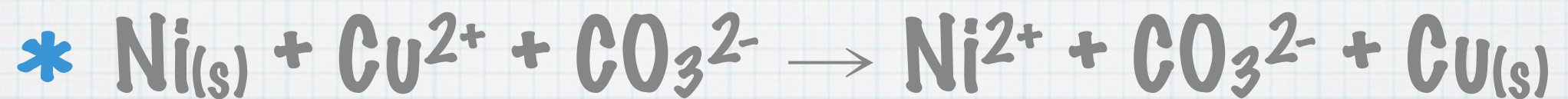
\* Let's look at the reaction:





# Background

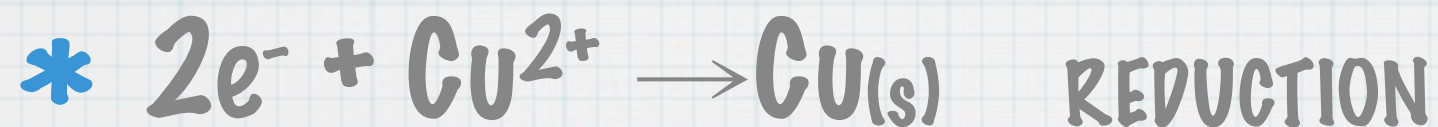
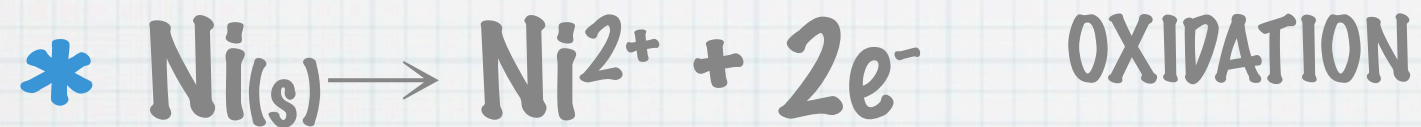
\* Break it down into net ionic





# Background

\* Now let's break these into HALF REACTIONS





# Salt Bridge

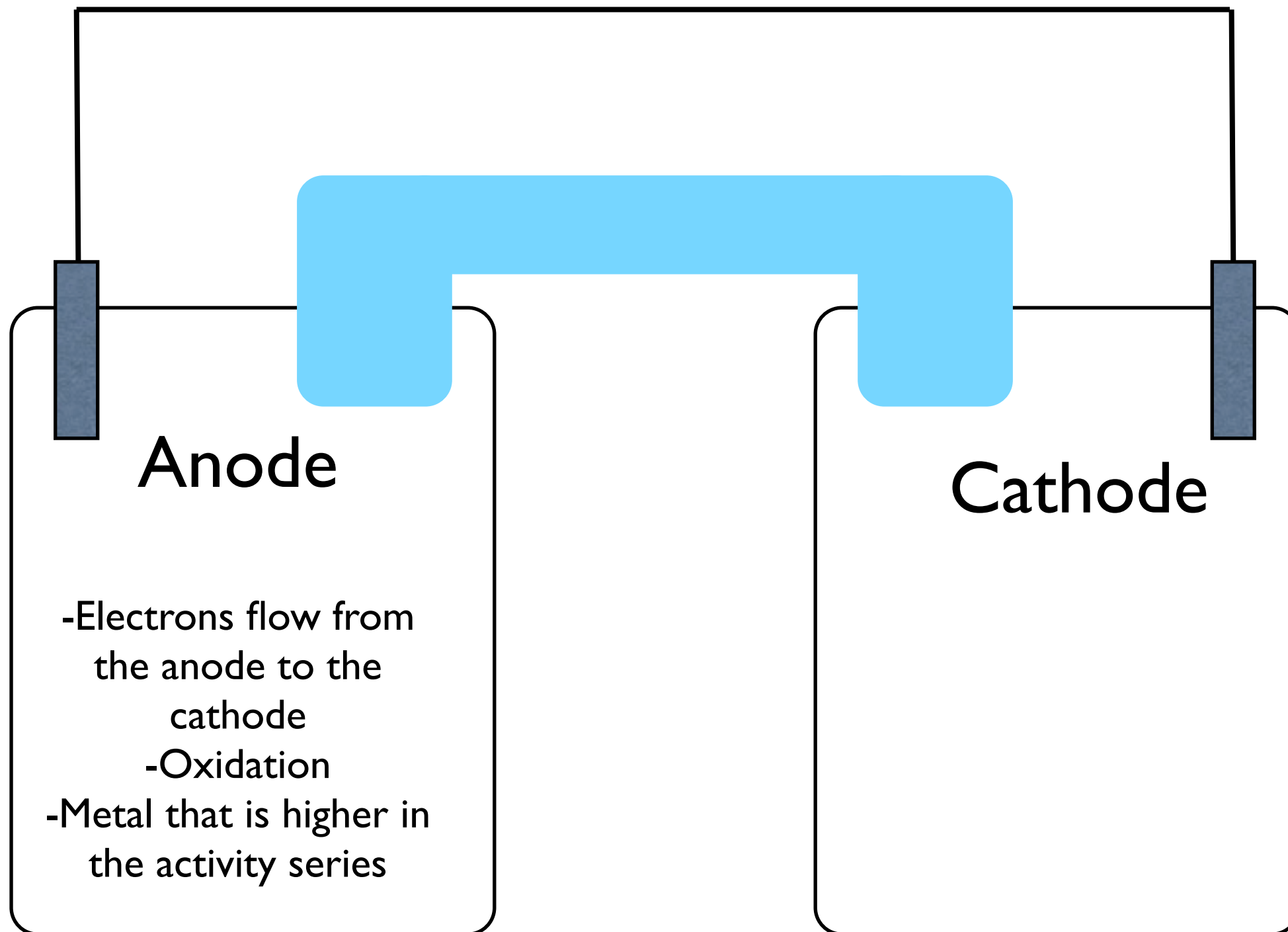
- \* Galvanic cells also have salt bridges which maintains the neutrality of the cell.



# Anode/Cathode

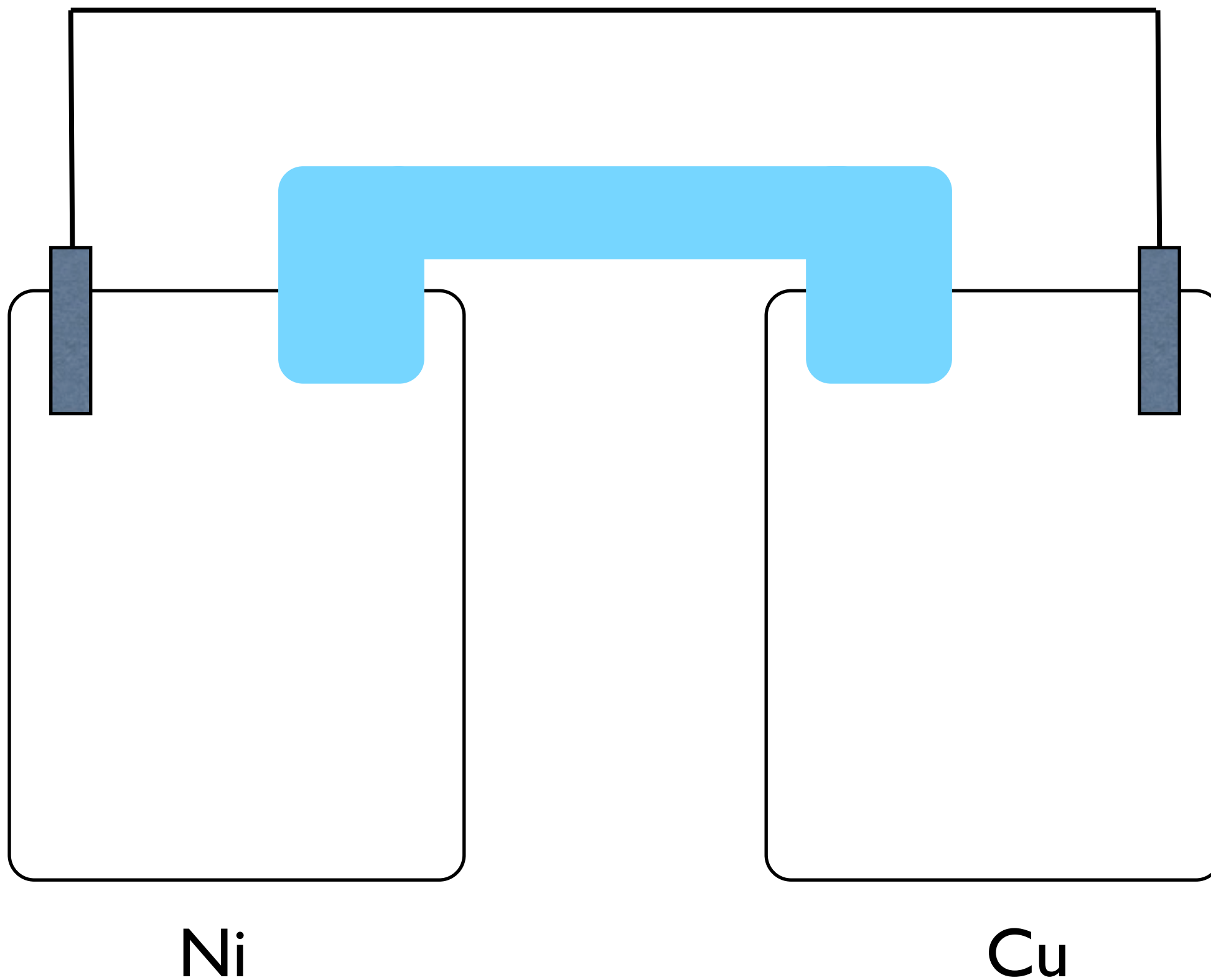
- \* **Anode:** Negative electrode, where oxidation occurs
- \* **Cathode:** Positive electrode, where reduction occurs





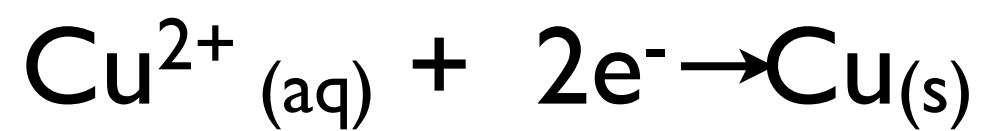
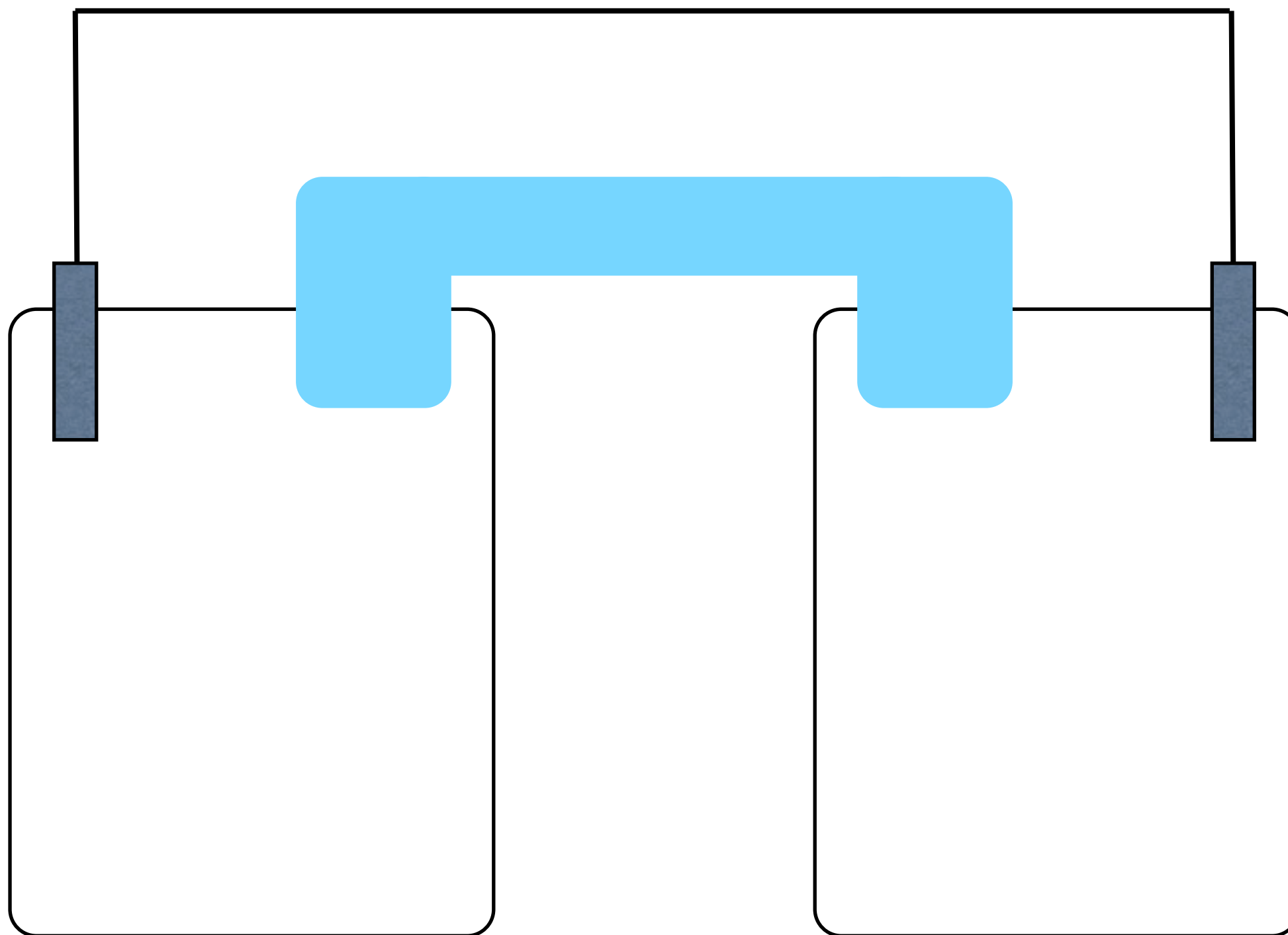


Create a diagram of a Galvanic cell using copper and nickel  
-Nickel is higher than copper on the activity sequence,  
nickel goes at the anode.





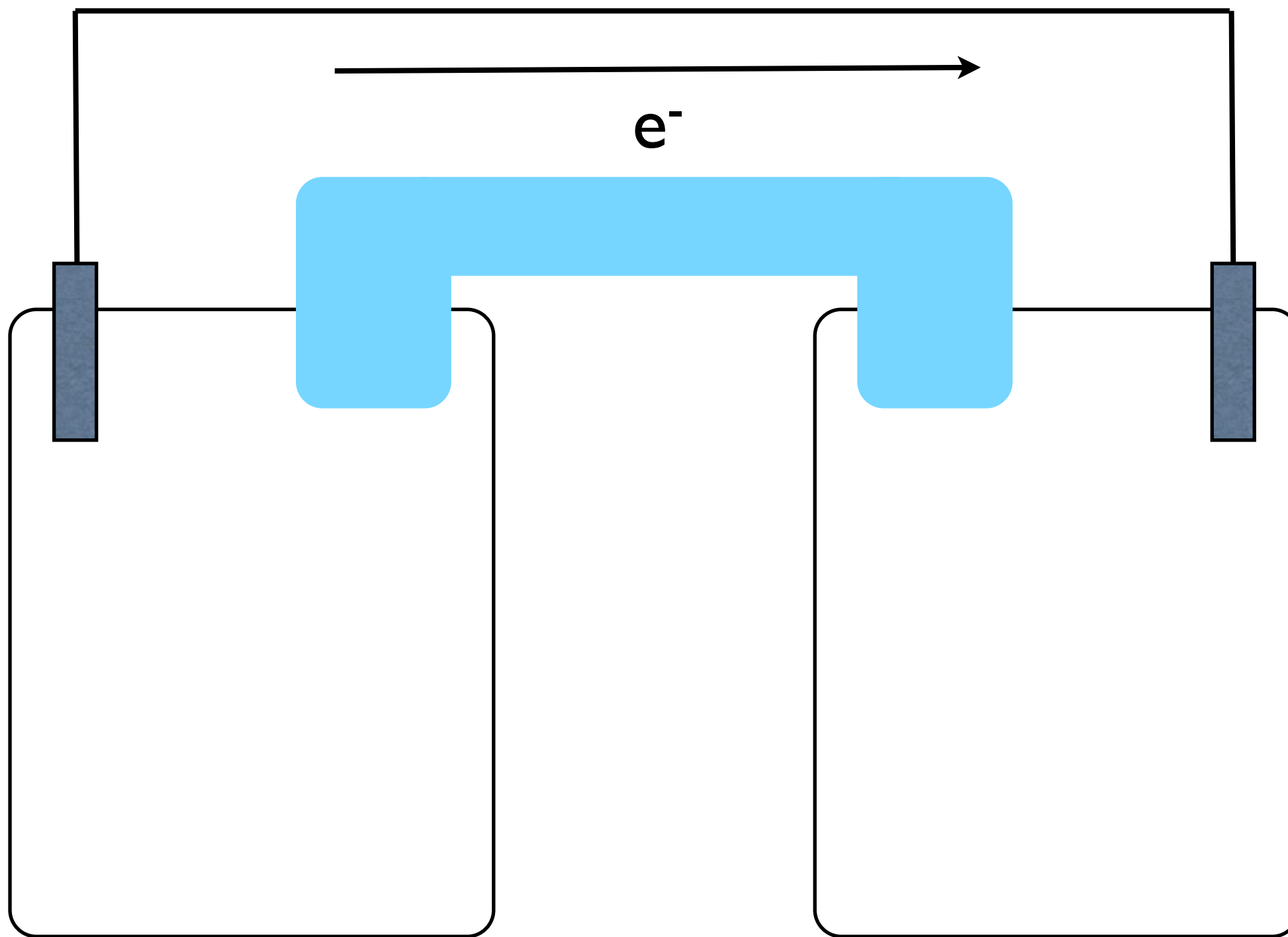
**Write the half reactions**



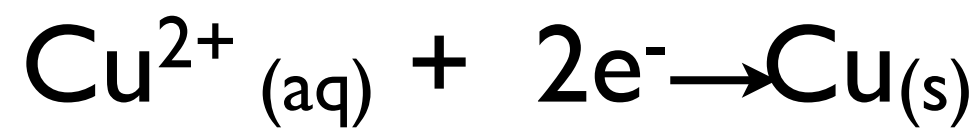


**Now show the flow of electrons**





$e^-$





**Now show the flow of ions**

