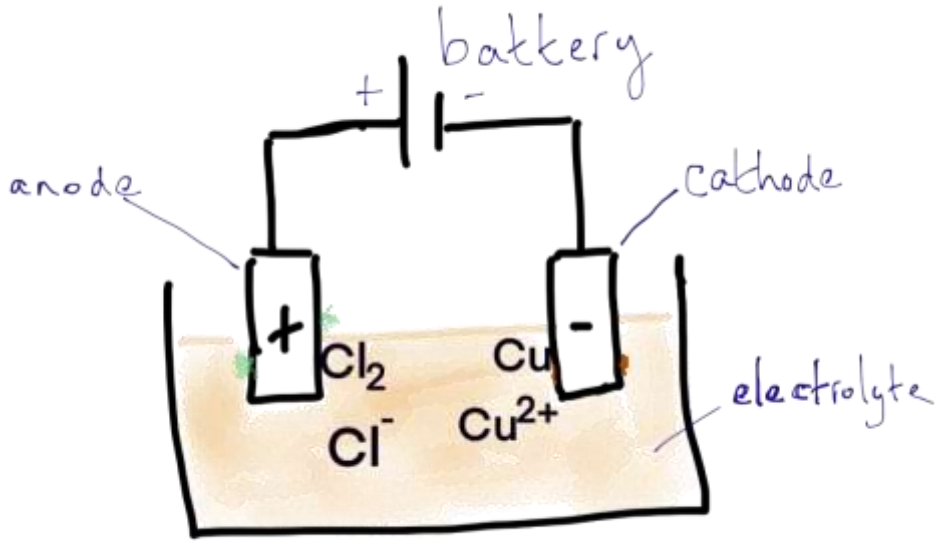
Passing electricity (direct current) through a copper chloride solution (copper chloride dissolved in water)

Circuit Diagram



When the circuit is connected a current flows. Ions in the solution part of the circuit allow charge(electrons) to move.

Negatively charged ions (anions) are attracted to the positively charged electrode (the anode).

Chloride ions Cl- are attracted to the anode. Once there each Cl- ion gives up one electron which joins the circuit. Chlorine atoms then quickly pair up to form chlorine molecules. Chlorine gas is produced and can be seen bubbling off. Test with damp litmus paper. The litmus paper goes red and then is quickly bleached white by the chlorine gas.

Positively charged copper cations are attracted to the negatively charged electrode (the cathode). At the cathode the copper ions accept 2 electrons to produce elemental copper.