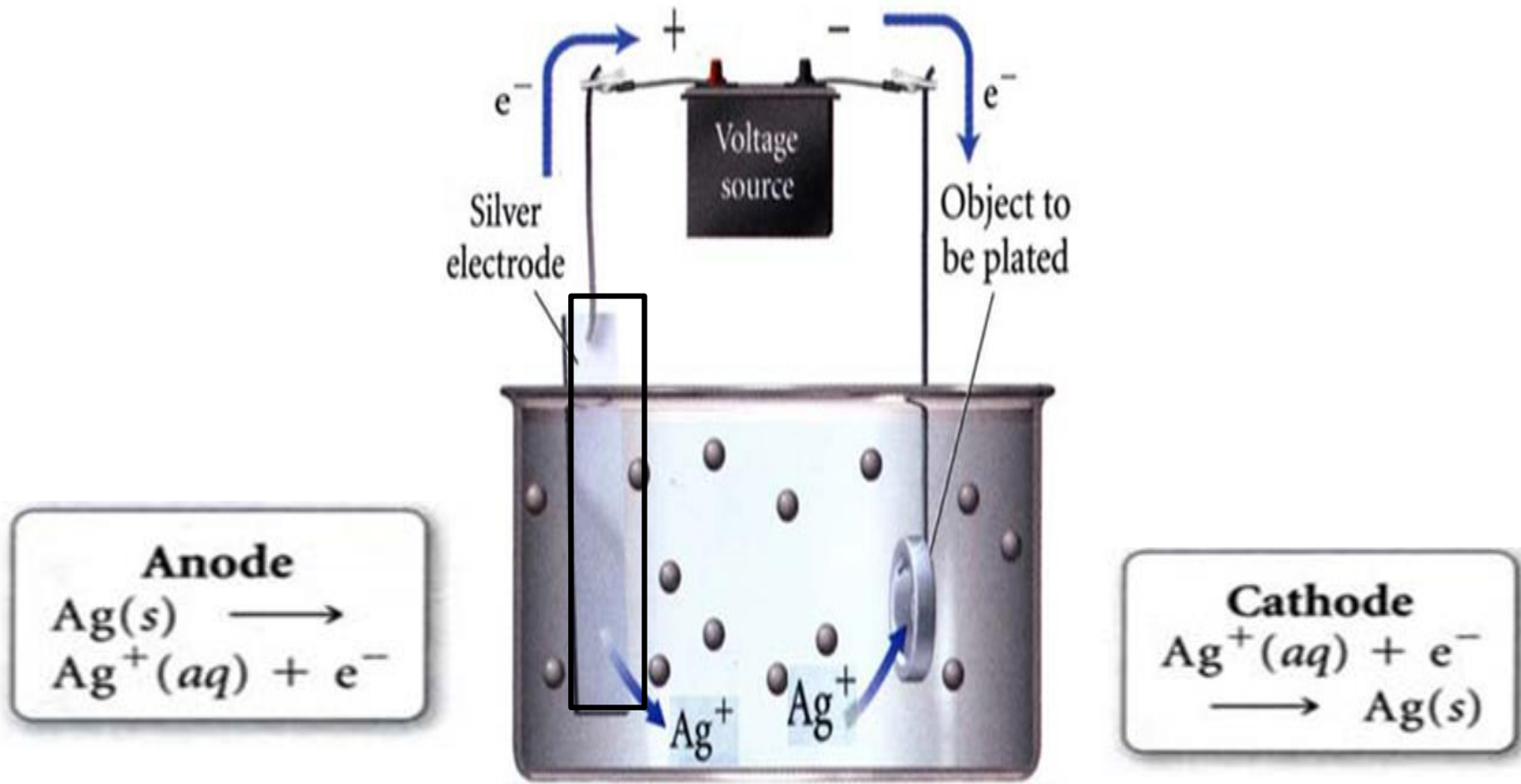


Industrial Application Of Electrolysis

1. Electroplating

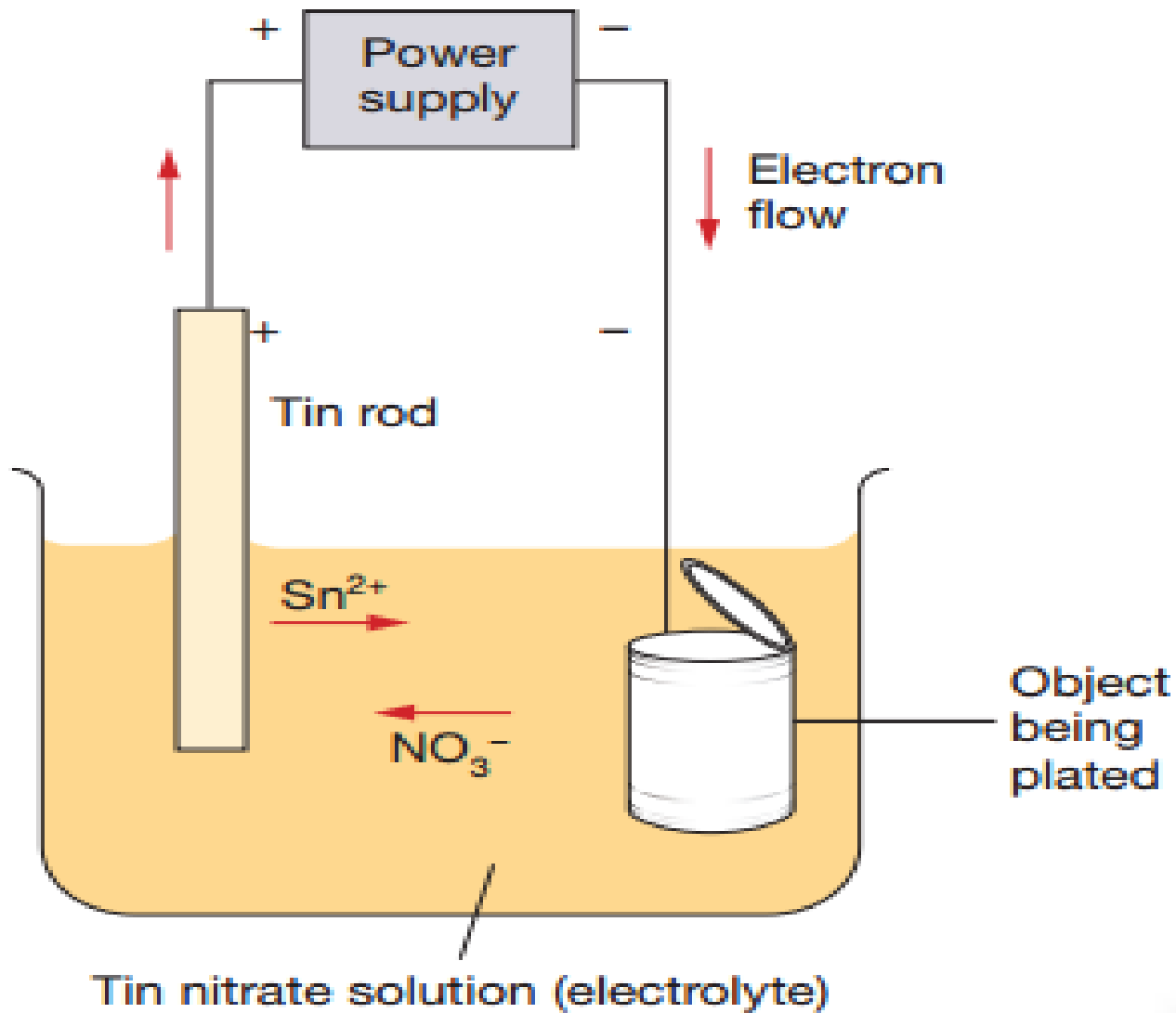
- **Electroplating** is a process in which a **thin coat of metal is applied to an object.**
- The process involves **placing the object in a solution containing the metal ions** and passing an electric current through the system, causing **the metal to be deposited on the object.**
- The **object to be coated** is used as the **cathode** whereas metal which will be used to coat the object is **anode.**

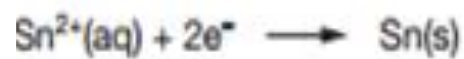
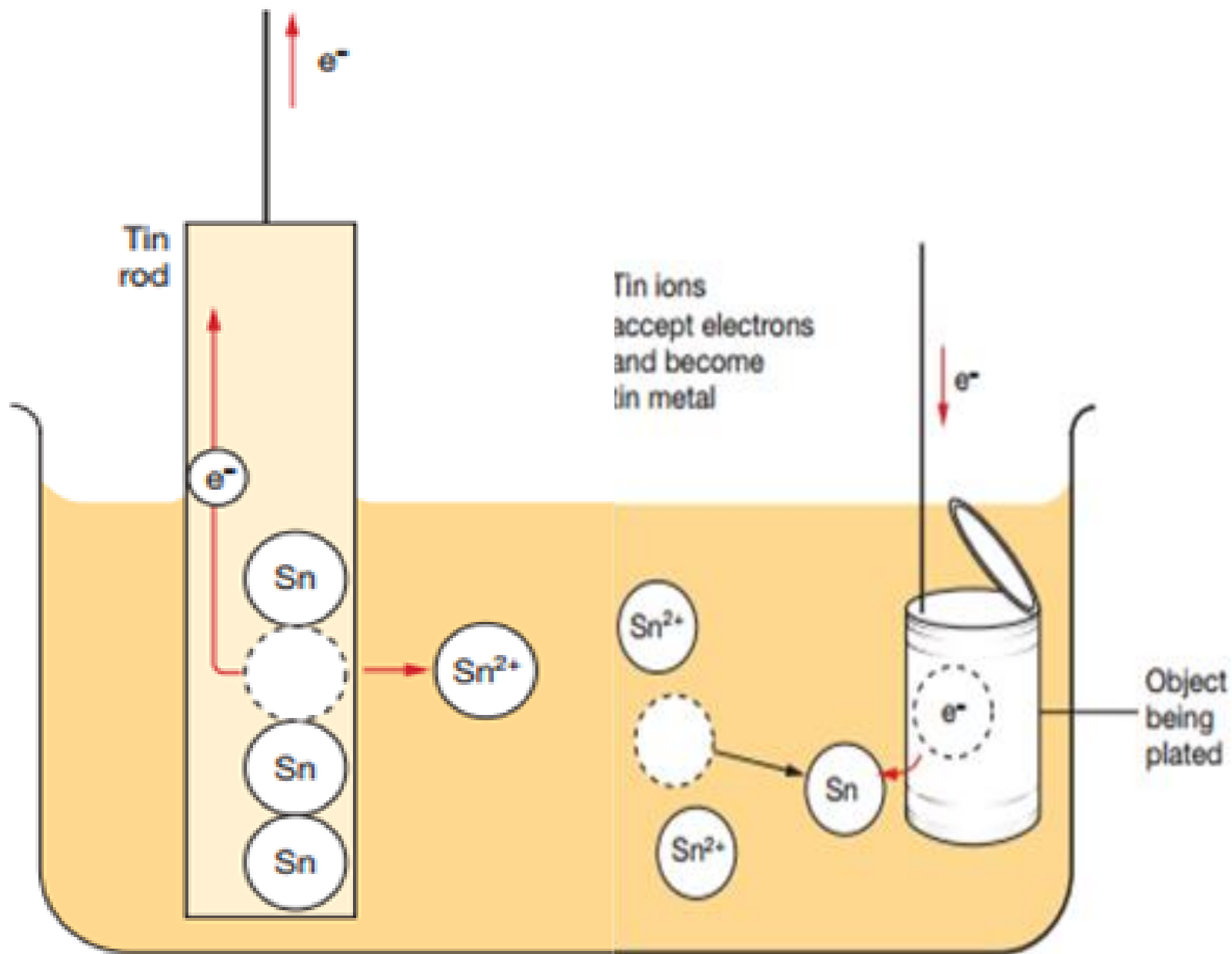
A CELL USED FOR ELECTROPLATING SILVER



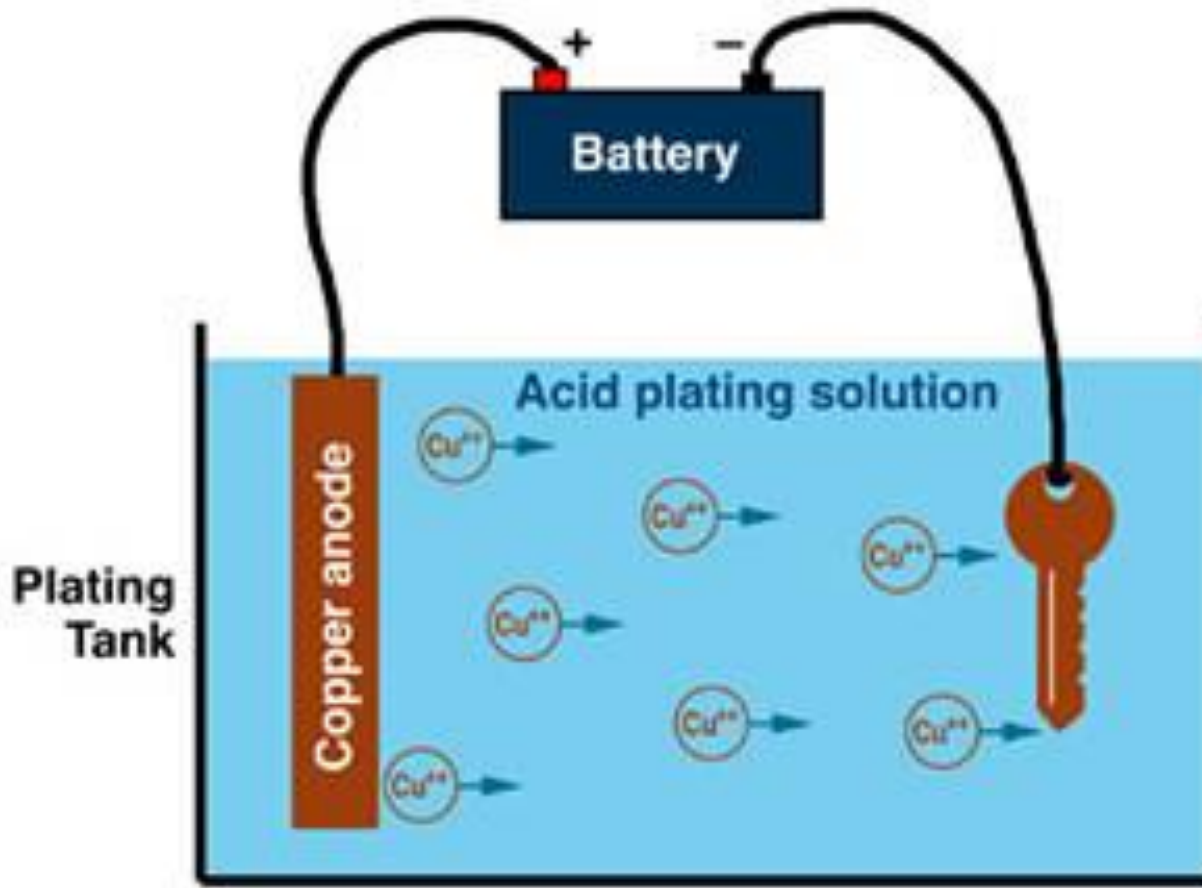
Silver can be plated from a solution of silver ions onto a metallic object such as ring in an electrolytic cell.

A CELL USED FOR ELECTROPLATING TIN





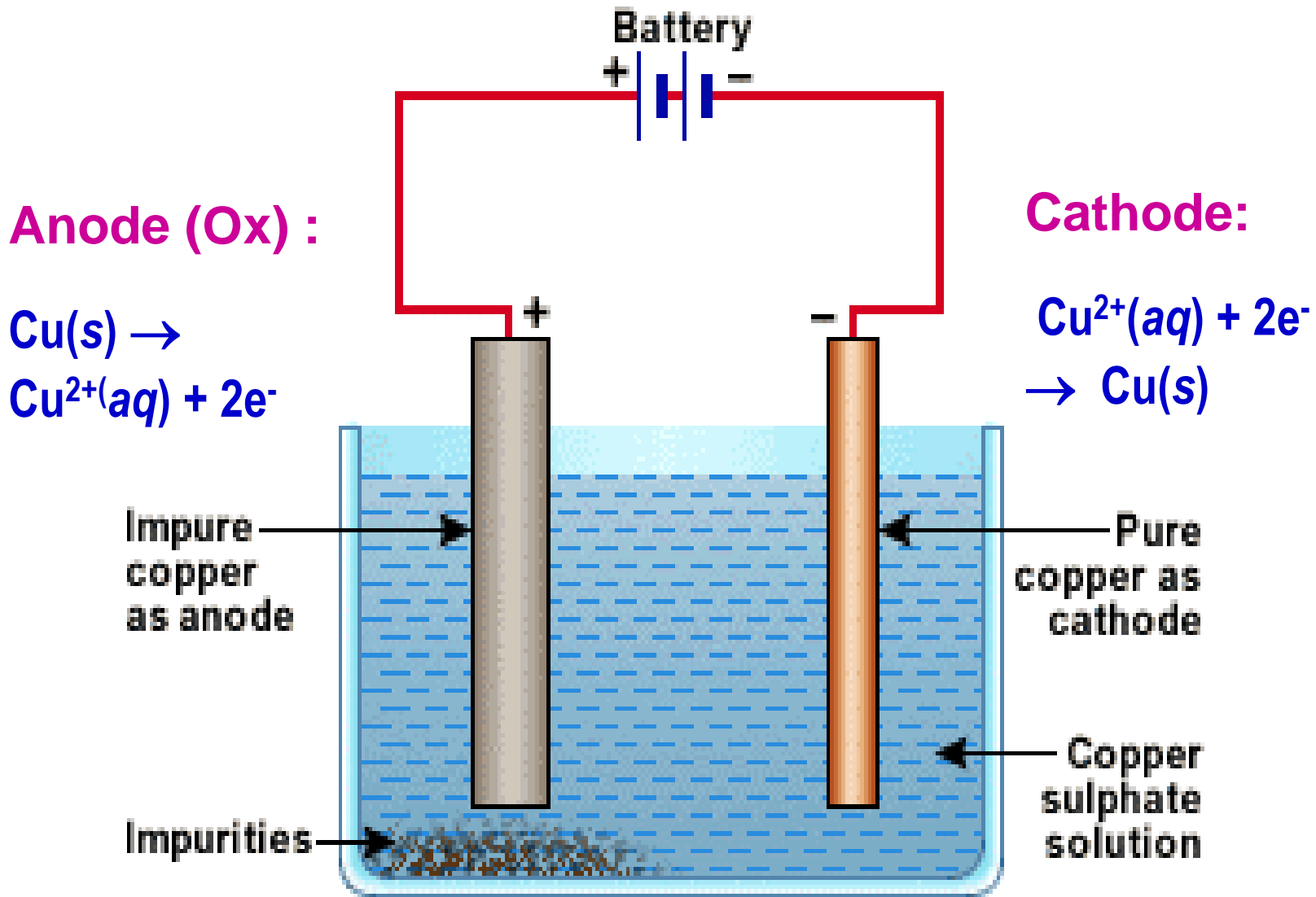
ELECTROPLATING A KEY



Typical plating experiment

2. PURIFICATION OF COPPER

- Copper is extracted from **copper ore** by reduction of carbon.
- However, the copper produced is not pure enough for use as a conductor, so it is purified using electrolysis.
- The **anode** is made of the **impure copper** which is to be purified.
- The **cathode** is a **bar of pure copper**.
- The two electrodes are placed in **a solution containing Cu^{2+} ion**.
e.g. copper (II) sulphate.



Experimental set up for the electrolytic refining of copper.