

Electrolysis in electroplating

- used to coat a cheaper metal with a more expensive one
- e.g. The electrolyte is copper sulfate solution. A metal pan is connected to the cathode. A piece of copper is connected to the anode.

Electrolysis in the purification of copper

- Both electrodes are made from copper.
- The cathode gradually gets coated with pure copper, as the anode gradually disappears.

Electrolysis in the manufacture of sodium hydroxide

- The electrolyte is sodium chloride solution.
- cathode: $2\text{H}^+ + 2\text{e}^- \rightarrow \text{H}_2$
- anode: $2\text{Cl}^- - 2\text{e}^- \rightarrow \text{Cl}_2$
- Chlorine gas forms at the anode.
- A solution of sodium hydroxide is formed.
- Inert materials must be used for the electrodes.

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