

In all electrochemical cells, oxidation occurs at the anode, reduction occurs at the cathode.

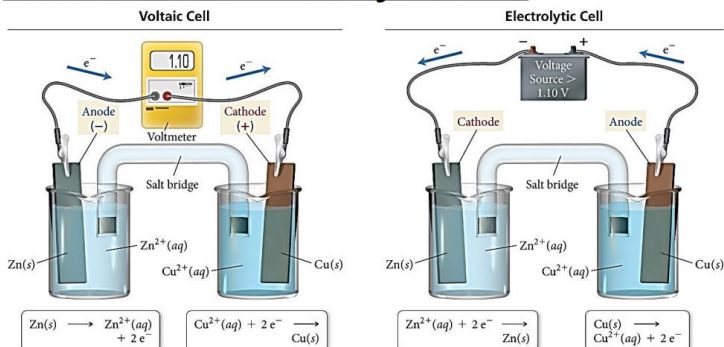
In voltaic cells

- Anode is the source of electrons and has a (-) charge.
- Cathode draws electrons and has a (+) charge.

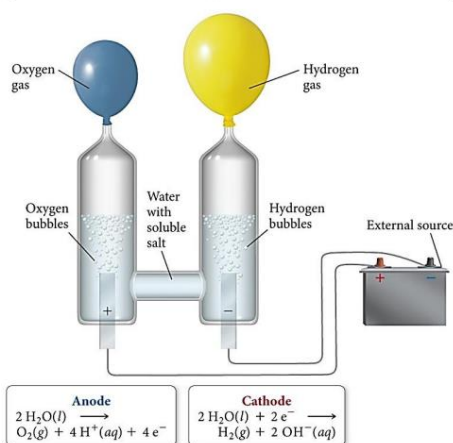
In electrolytic cells

- Electrons are drawn off the anode, so it must have a place to release the electrons—the positive terminal of the battery.
- Electrons are forced toward the anode, so it must have a source of electrons—the negative terminal of the battery.

Voltaic versus Electrolytic Cells



Electrolysis of Water

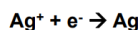


Electroplating of Silver

Anode reaction:

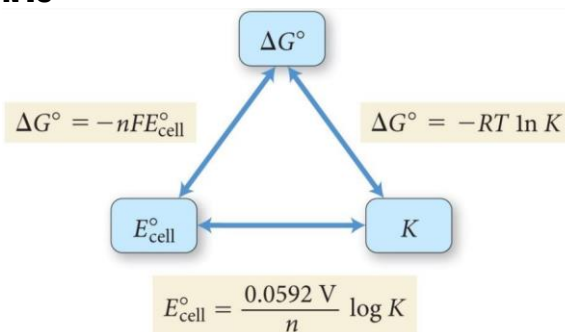
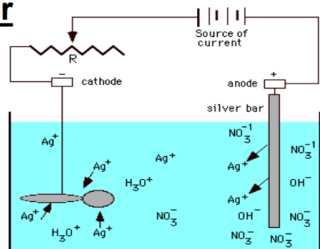


Cathode reaction:



Electroplating requirements:

1. Solution of the plating metal
2. Anode made of the plating metal
3. Cathode with the object to be plated
4. Source of current



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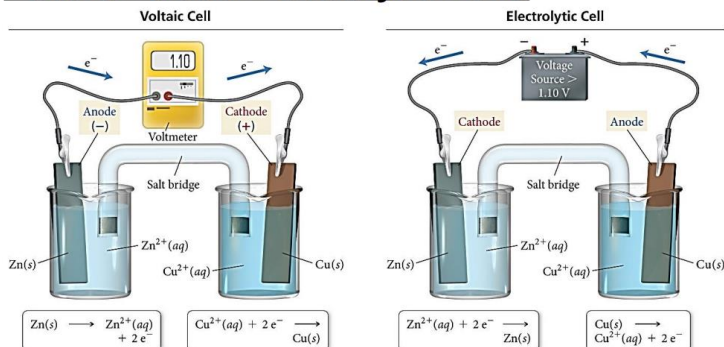
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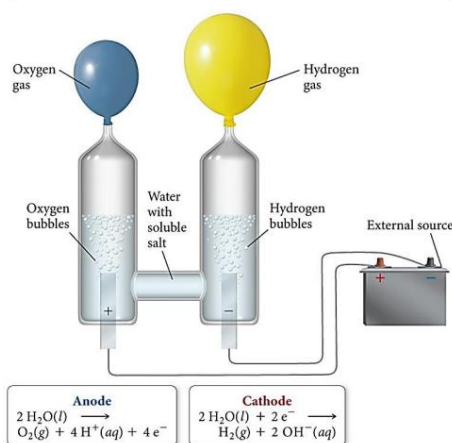
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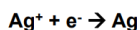


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Cathode reaction:



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