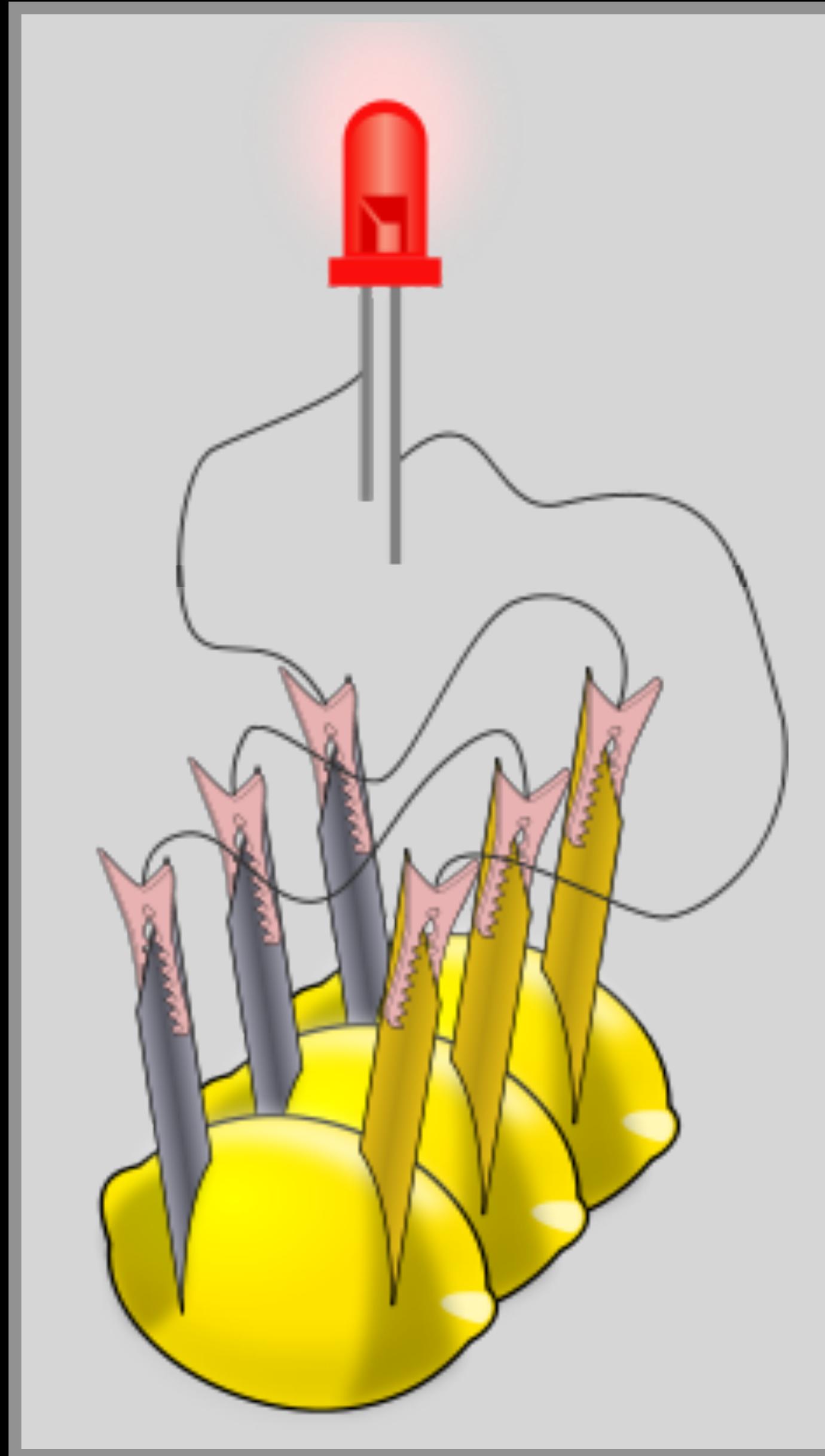
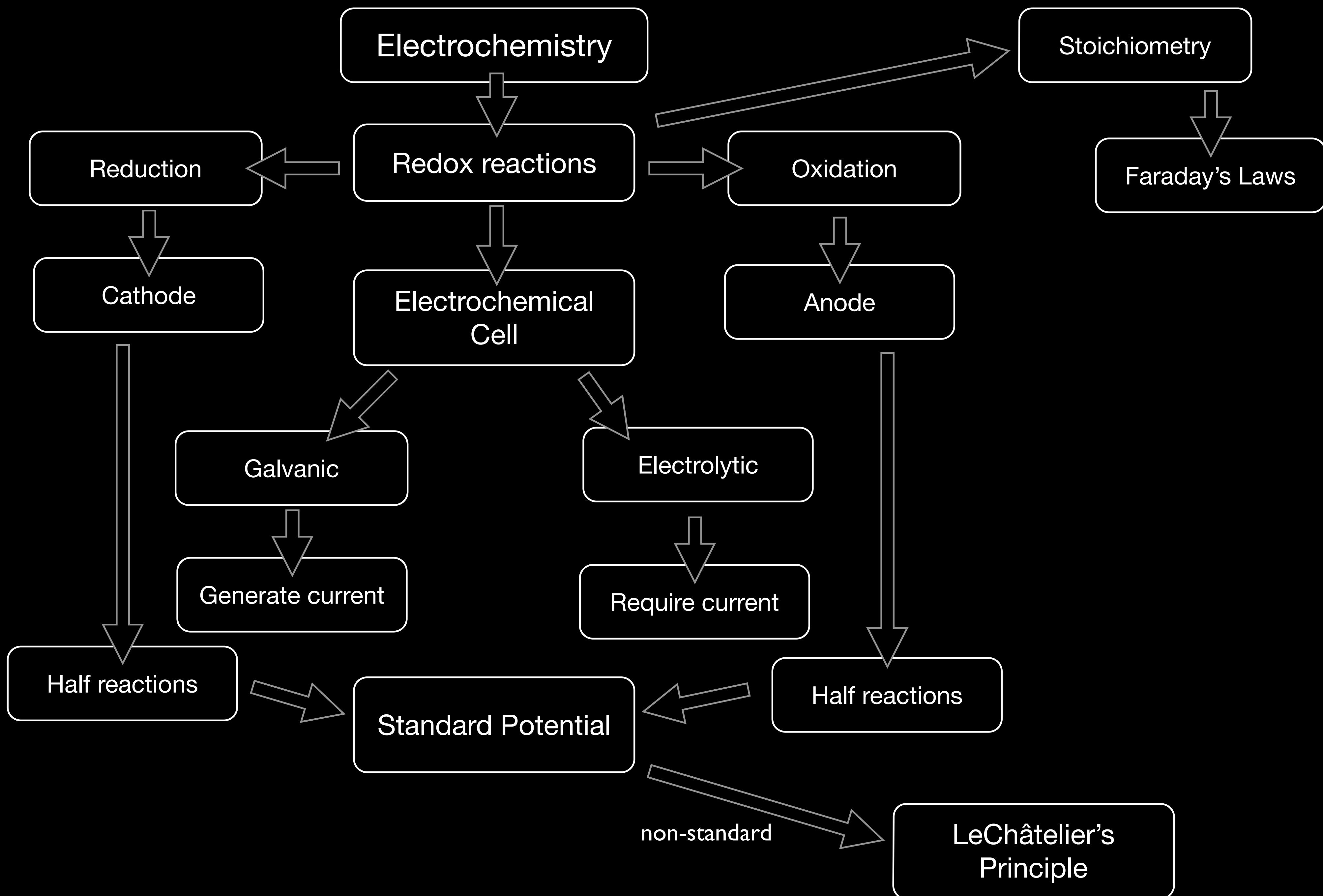
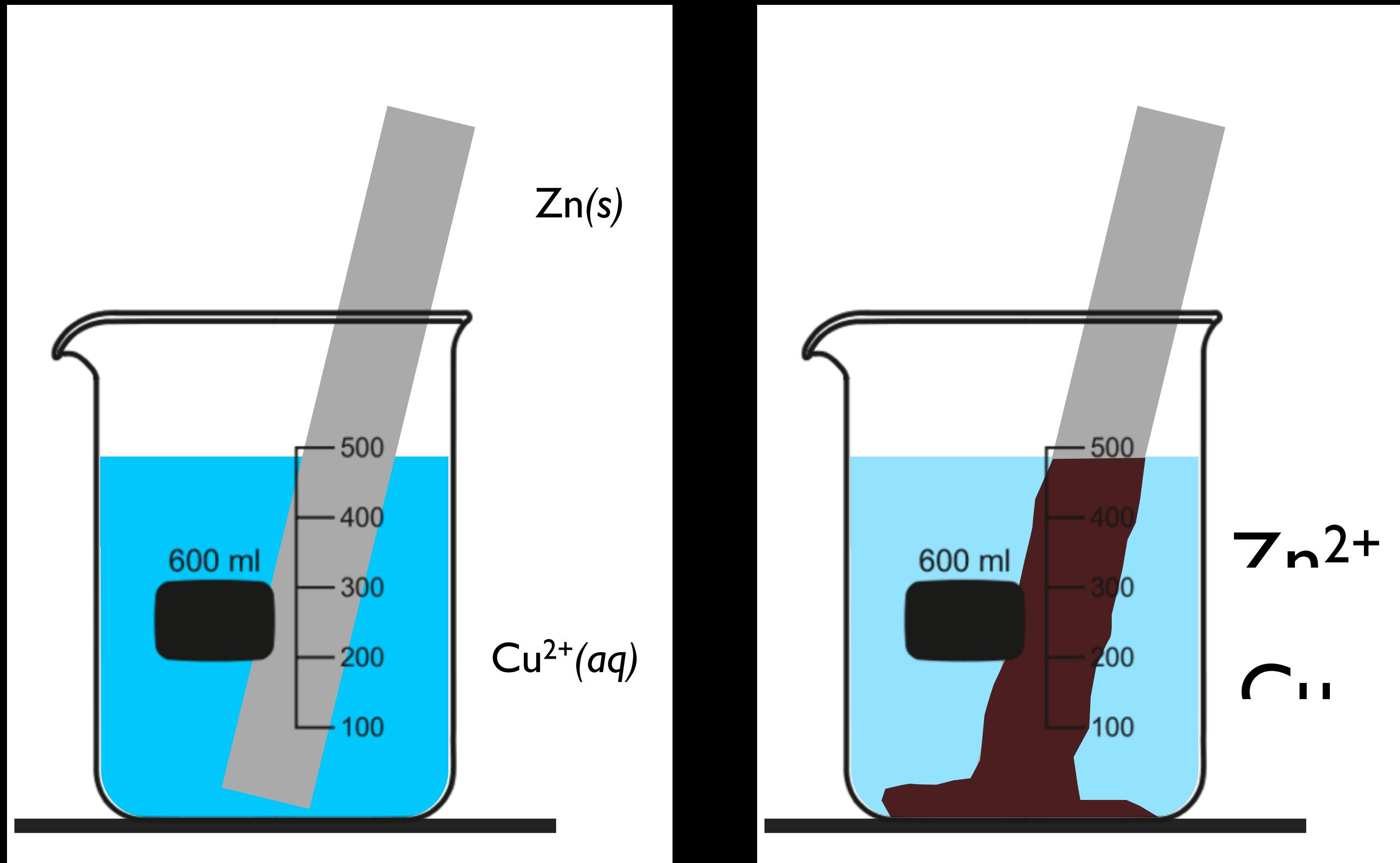
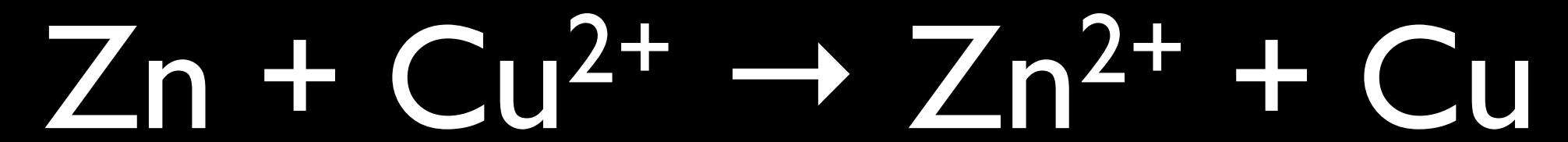


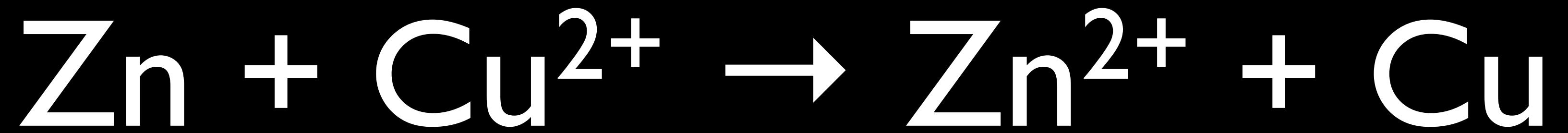
# Electrochemistry



Chemistry Essentials - 034







## Half Reactions

Oxidation



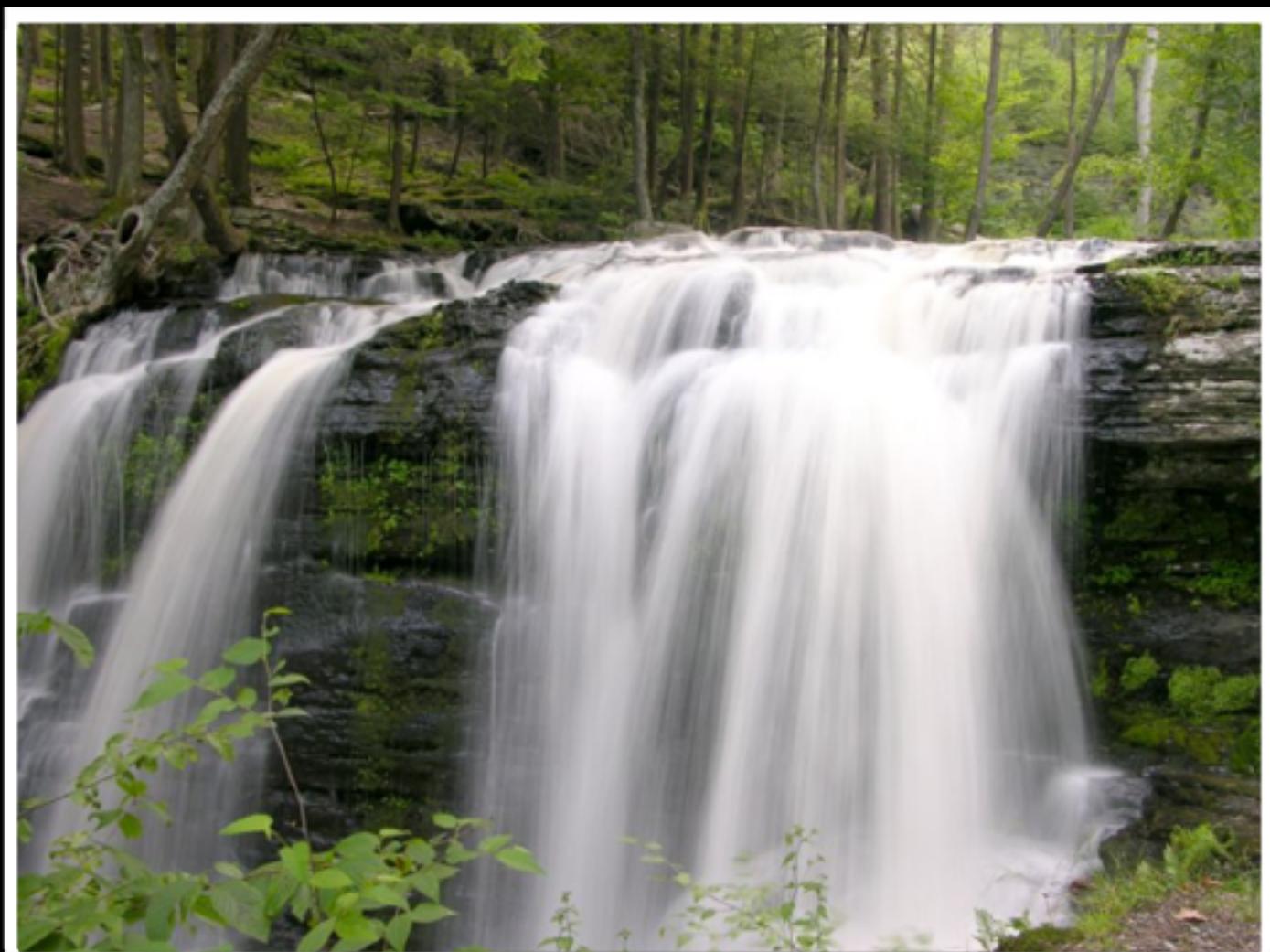
Reduction



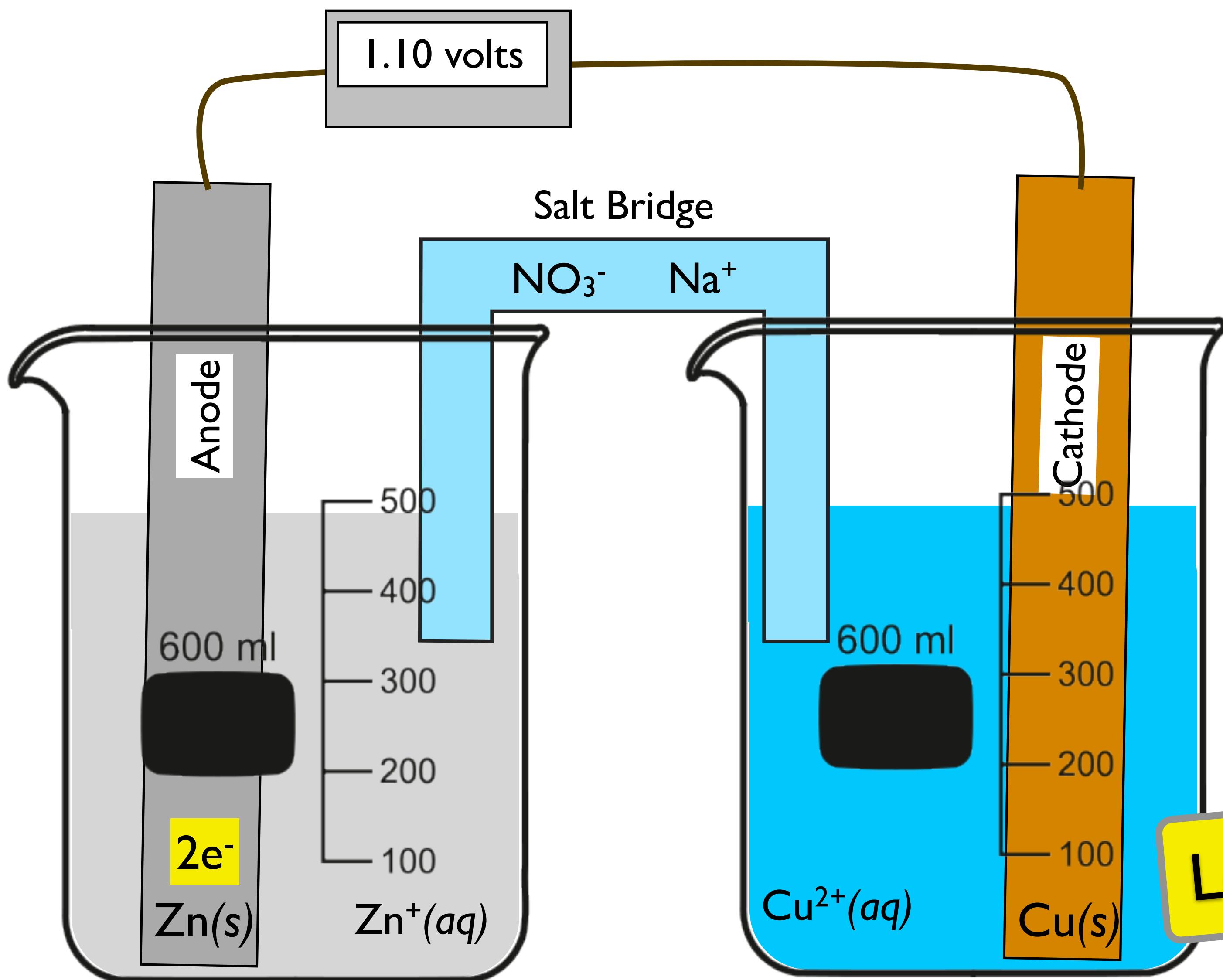
Reduction Potential

$$E^0 = .76\text{ V}$$

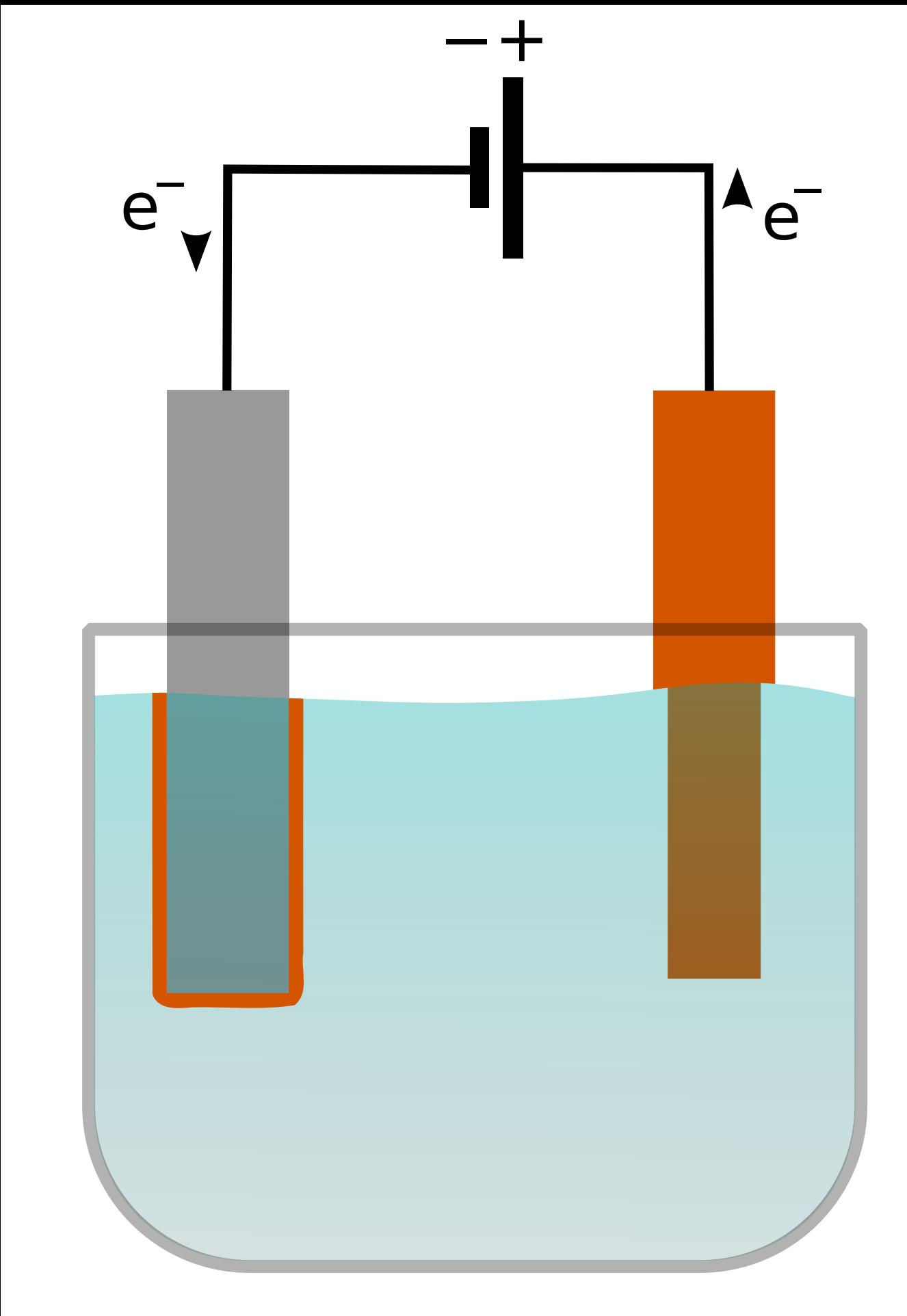
$$E^0 = .34\text{ V}$$



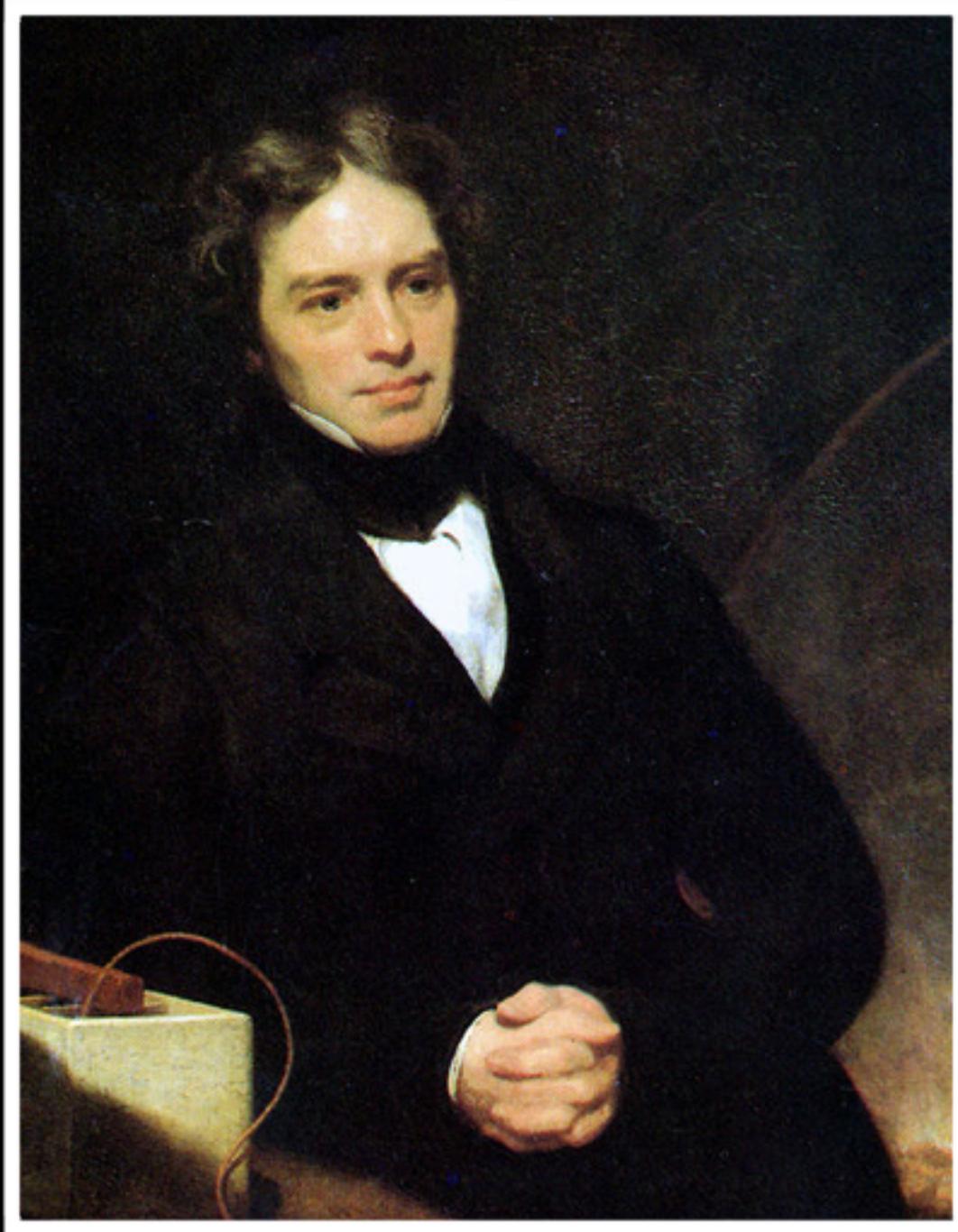
# Galvanic Cell



# Electrolytic Cell

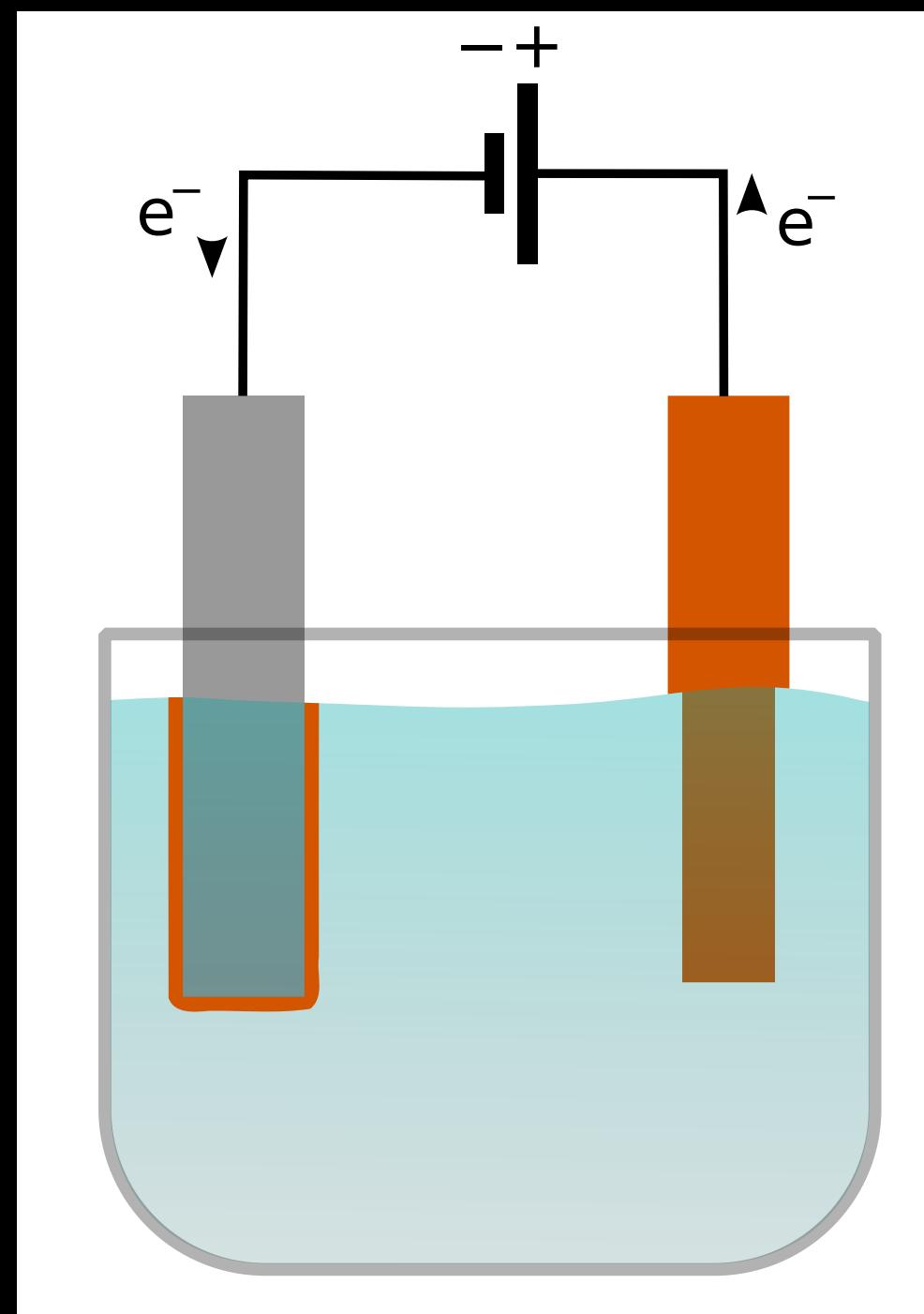


Rechargeable battery

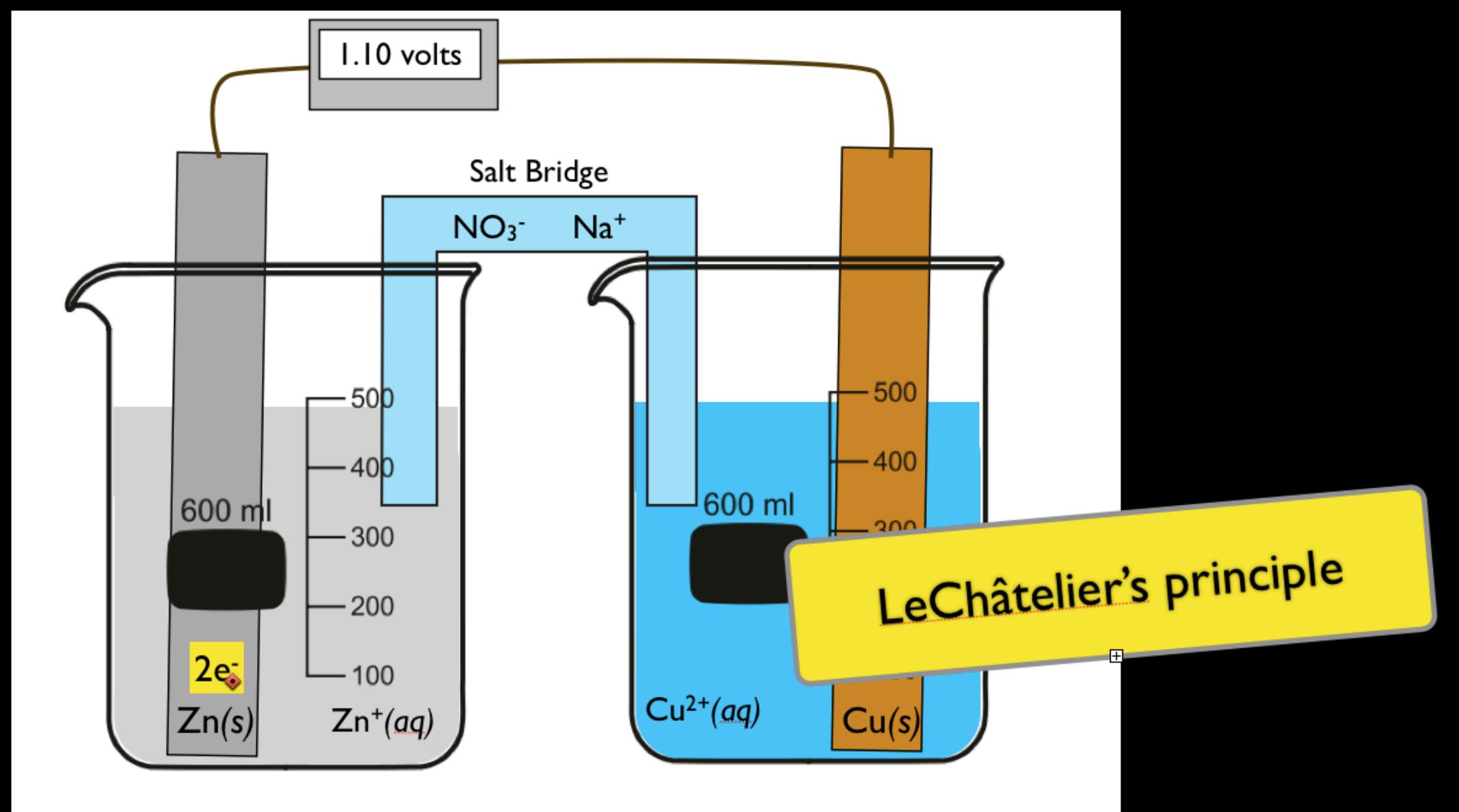


# Faraday's Laws

- Electricity ~ Mass
- Mass ~ Equivalent weight



# Did you learn?



To analyze data from galvanic or electrolytic cells to identify properties of the underlying redox reaction.

# Did you learn?

## Half Reactions

		<u>Reduction Potential</u>
Oxidation	$\text{Zn} \rightarrow \text{Zn}^{2+} + 2\text{e}^-$	$E^0 = .76\text{V}$
Reduction	$\text{Cu}^{2+} + 2\text{e}^- \rightarrow \text{Cu}$	$E^0 = .34\text{V}$

## Faraday's Laws

- Electricity ~ Mass
- Mass ~ Equivalent weight

To make predictions about galvanic or electrolytic reactions based on half reactions and/or Faraday's laws.

## Acknowledgements

and, Photo by. *A Photograph of the Top of the Fulmer Falls Waterfall Located in the Childs Recreation Area in the Pocono Mountains.*, July 29, 2006. Self-photographed. [http://commons.wikimedia.org/wiki/File:Fulmer\\_Falls\\_Top\\_2\\_3264px.jpg](http://commons.wikimedia.org/wiki/File:Fulmer_Falls_Top_2_3264px.jpg).  
“File:Copper Electroplating.svg,” September 9, 2013. [http://en.wikipedia.org/wiki/File:Copper\\_electroplating.svg](http://en.wikipedia.org/wiki/File:Copper_electroplating.svg).  
“File:ElectrochemCell.png,” September 9, 2013. <http://en.wikipedia.org/wiki/File:ElectrochemCell.png>.  
“File:Galvanic Cell.svg,” September 9, 2013. [http://en.wikipedia.org/wiki/File:Galvanic\\_Cell.svg](http://en.wikipedia.org/wiki/File:Galvanic_Cell.svg).  
“File:Lemon Battery With LED.svg,” September 21, 2013. [http://en.wikipedia.org/wiki/File:Lemon\\_Battery\\_With\\_LED.svg](http://en.wikipedia.org/wiki/File:Lemon_Battery_With_LED.svg).  
“File:M Faraday Th Phillips Oil 1842.jpg,” September 21, 2013. [http://en.wikipedia.org/wiki/File:M\\_Faraday\\_Th\\_Phillips\\_oil\\_1842.jpg](http://en.wikipedia.org/wiki/File:M_Faraday_Th_Phillips_oil_1842.jpg).  
“File:NiMH 2500mAh.jpg,” September 21, 2013. [http://en.wikipedia.org/wiki/File:NiMH\\_2500mAh.jpg](http://en.wikipedia.org/wiki/File:NiMH_2500mAh.jpg).  
Lucasbosch. *English: Low and High Form Beakers*, October 19, 2011. Own work. [http://commons.wikimedia.org/wiki/File:Beakers\\_en.svg](http://commons.wikimedia.org/wiki/File:Beakers_en.svg).



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