

To make an electrochemical cell, you need:

ELECTRODES:

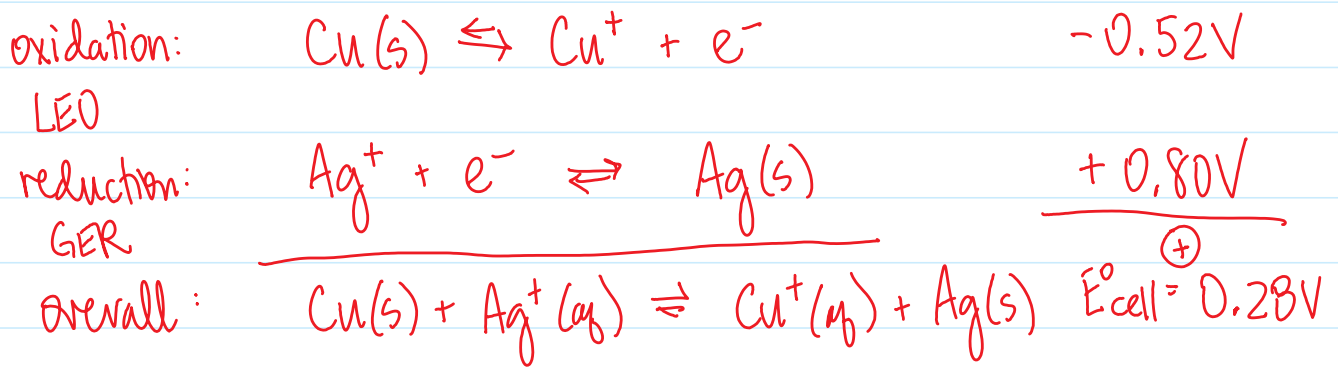
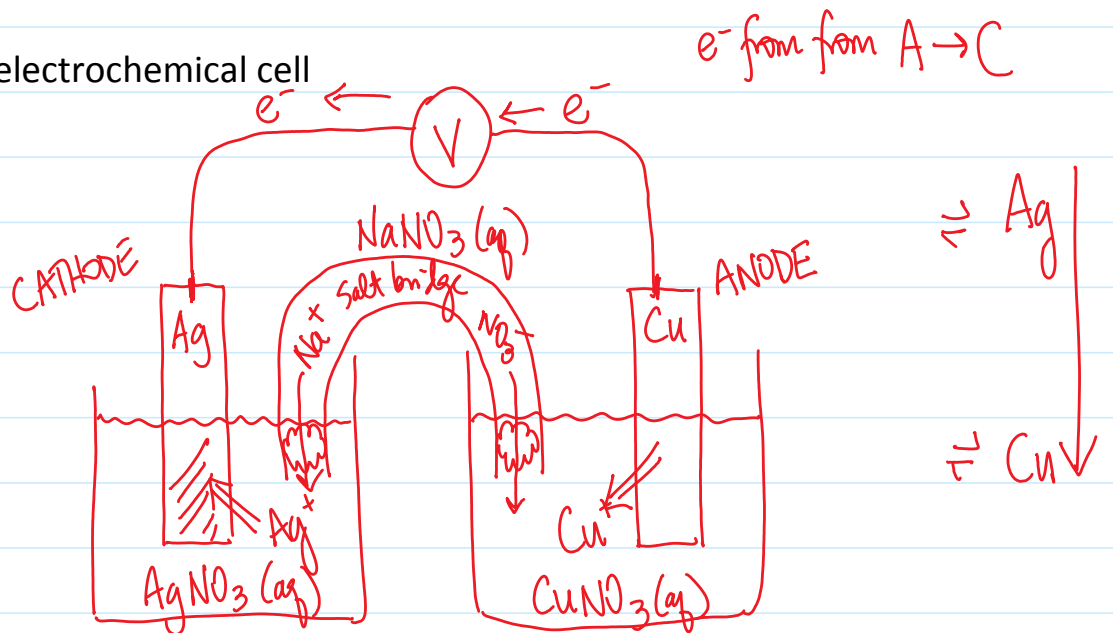
- a. ANODE - where oxidation occurs, ⊖
- b. CATHODE - where reduction occurs, ⊕

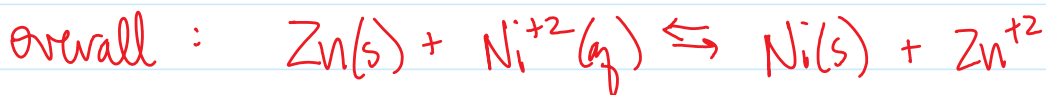
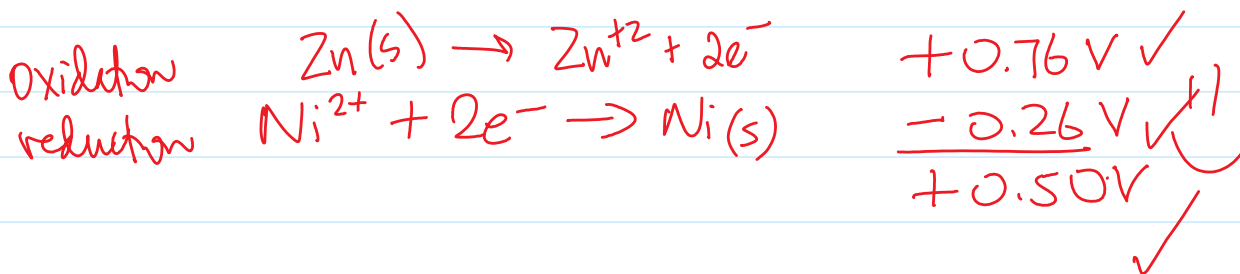
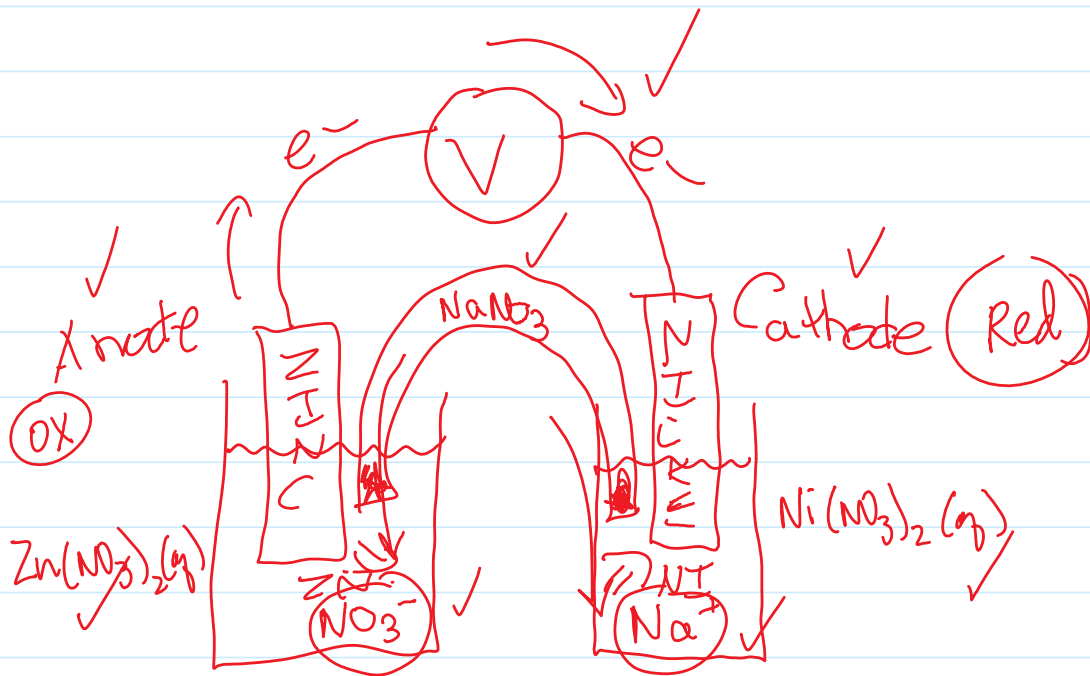
MEMORY HELP: An OX CARE D

anode oxidation      cathode reduction

How does it work?

Ex. Ag and Cu electrochemical cell



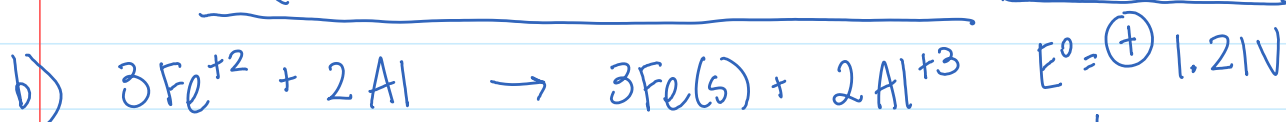
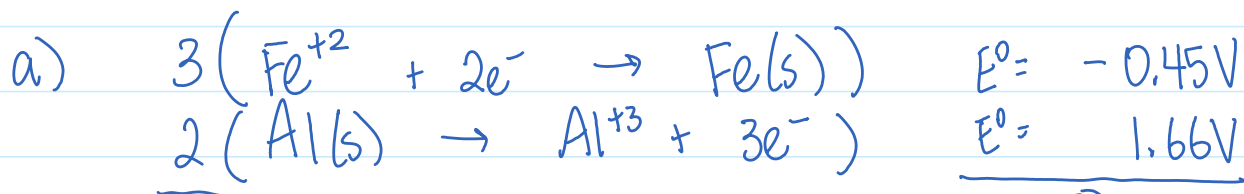
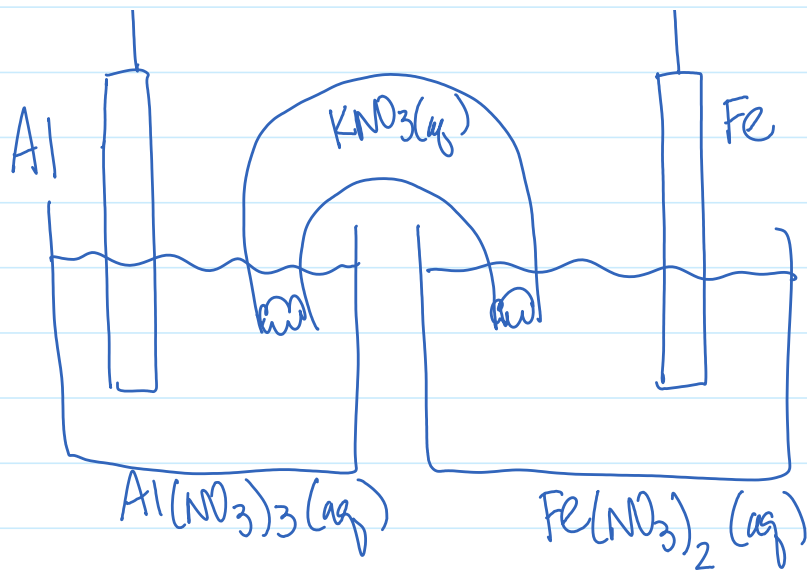


if you add 3.0M  $Ni(NO_3)_2$   $V \uparrow$  why?  
 incr  $[Ni^{+2}]$   
 equil shifts to the products

add 3.0M  $Zn(NO_3)_2$

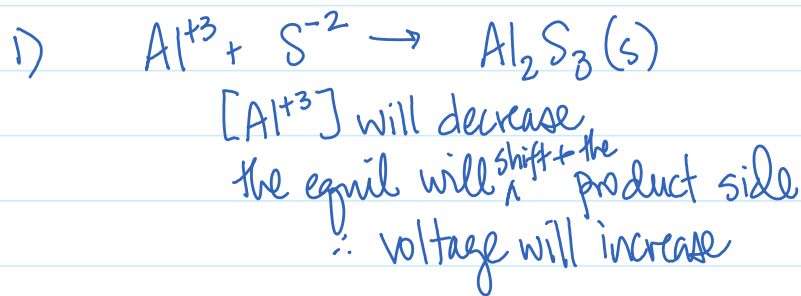
$[Zn^{+2}] \uparrow$   
 shifts to the reactants  
 $\therefore V \downarrow$





battery  
electrochemical cell  
voltaic cell

c) Add  $\text{Na}_2\text{S}$  to the Al half-cell



2) Add  $\text{Na}_2\text{S}$  to Fe half-cell



$[\text{Fe}^{+2}]$  will decrease  
the equil will shift to the reactant side  
 $\therefore$  voltage will decrease

3) Add 5M  $\text{Al}(\text{NO}_3)_3$  to the Al half cell

$[\text{Al}^{3+}]$  will increase

the equil will shift to the reactant side

$\therefore$  voltage will decrease