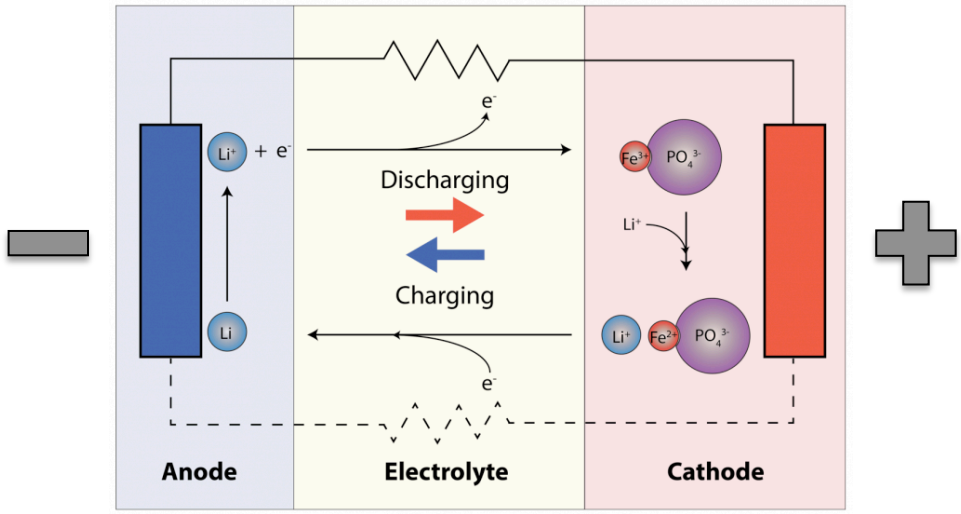
M3D5:
Battery assembly and testing

12/3/15

To measure the capacity of your battery, a Galvanostat was used to make measurements during cycles of charging and discharging. Specifically, your battery was charged and discharged 5 times (5 cycles) and each charge and discharge was completed over the course of 10 hours.

Internally, the cathode underwent the following half-cell reaction:

$$Fe(III)PO_4 + Li + e- \longleftrightarrow LiFe(II)PO_4$$



The image above shows both charge and discharge; however, it is important to note that these are separate reactions that do not happen simultaneously.

During discharge the battery performs work (ie powers a device). In this state lithium ions flow from the anode to the cathode and electrons flow from the anode, through a load, to the cathode. When the battery gets charged, this is reversed.

To help you prepare your Mod 3 biomaterials mini-report, the teaching faculty will host open office hours Sunday, Dec. 6 from 10am – 5pm in 56-302.

As a reminder:

Mod 3 biomaterials mini-report is *due* Thursday/Friday, Dec. 3/4 at 10pm

Mod 3 research proposal presentation is due Tuesday/Wednesday, Dec. 8/9 at 1pm