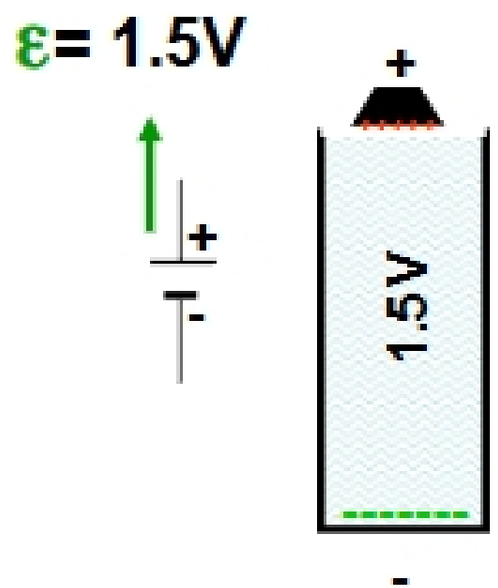
Physics 202, Lecture 15

Today's Topics

- Faraday's Law (Ch 28)
  - Change of Magnetic Flux and Emf (ε)
  - Lenz's Law
  - Faraday's Law of Induction

Electromotive Force (emf, ε)

- Electromotive "force", emf, is a measure of the voltage that can be provided by a source.
  - For a given device, if a charge Q passes through that device, and gains an energy U, the net emf for that device is the energy gained per unit charge, or U/Q.
  - emf is not a force, it has a unit of volts
  - sources of emf:
    - chemical process (battery)
    - change of magnetic flux
    - semiconductors…..
- e.g. battery:
  - notice that emf has a direction
  - emf may exist even if no current.



Demo: Emf and Change of Magnetic Flux