

# Electric Power

- Electrical power

$$P = VI$$

$$P = I^2R$$

$$P = V^2 / R$$

- Electrical energy

$$E = P \times t$$

- Electromotive force in a cell

- The electromotive force is defined as the energy provided by the cell when a charge of 1 Coulomb travels one revolution through a closed path containing the cell.

$$W = EIt$$

w = work done by the cell.

- **Charge and discharge a cell**

- A battery discharges when current flows away from the positive terminal
- When current enters from the positive terminal, it is charged

- **Charge**

$$V_A - V_B = E + IR$$

- **Discharge**

$$V_A - V_B = E - IR$$