

LECTURE 23 CELL POTENTIALS AND FREE ENERGY

I. Electrical Work

A. $\Delta G_{\text{rxn}} = w_e$

B. $w_e = -nFE$

II. Equilibrium Constant and Cell Voltage

A. $K = \exp\left(\frac{nFE^\circ}{RT}\right)$

B. E°_{cell} and spontaneity

III. Discharging a Battery

A. Nernst equation

B. Calculating cell potential

IV. Concentration Cell