Homework Problem set for Diffusion.

1] Describe the three modes of MT within liquid solutions. Write down the equation that describes all three modes and label the equation components for each mode.

2] How is migration eliminated as a significant MT term? Why is it eliminated in electroanalytical methods?

3] Using a simple dimensional analysis scheme, show how diffusional flux of electroactive species is related to current and to FFL. Assume diffusion-limited kinetics.

4] Assuming that D = 1.0e-5 cm^2/s what is the diffusion layer thickness after 100 s of experiment time assuming diffusion-limited kinetics.

5] Draw a concentration profile diagram illustrating the growth of the diffusion layer with respect to time.

6] Draw a concentration profile for a redox species undergoing the reduction ox + e- = red that is *not* undergoing diffusion-limited kinetics.