Lecture 9
Outline

Chapter 3.2 Drift

- **Definition**: Redistribution of particles
  - Examples: ink drop in water; perfume in a room
  - Semiconductors: charged carriers $\rightarrow$ diffusion currents

- **Hot-Point Probe Measurement**
  - Energetic carriers diffuse away, resulting in a deficit of majority carriers.
  - Easy n- or p-type measurement

- **Diffusion Currents**

- **Total Currents**

- **Einstein Relation**
  - Nonuniformly doped semiconductors
  - Constancy of the Fermi Level under equilibrium conditions
  - Zero current flow under equilibrium conditions
  - $D_p/\mu_p = kT/q$

- **Exercise 3.2**

**Reading**: Chapter 3.2

**Quiz # 3**: 10 minutes

**Homework #4**:
3.2 (a-d), 3.5, 3.6, 3.10, 3.12, 3.13
Due February 4.