SHE - Hall Effect in Semiconductor

Signature Sheet

Student's Name _____ Partner's Name _____

Pre-Lab Discussion Questions

It is your responsibility to discuss this lab with an instructor before your first day of your scheduled lab period. This signed sheet must be included as the first page of your report. Without it you will lose grade points. You should be prepared to discuss at least the following before you come to lab:

1. Why are there energy bands in materials? What is a valence band? A conduction band? A band gap?
2. How do conductors, insulators, and semiconductors differ in their energy-band structures?
3. How do we explain the fact that there are "free electrons" in a metallic conductor? What is an extrinsic semiconductor?
4. What is the Hall Effect?
5. Explain the Van Der Pauw Technique.
6. What measurements are needed for studying the Hall Effect?

Staff Signature _____ Date _____

Completed before the first day of lab? (Circle one) Yes / No

Mid-Lab Discussion Questions

1. By day 3, calculate the ratio of mobilities b (see Melissinos reference).

Staff Signature _____ Date _____

Completed by day 3 of lab? (Circle one) Yes / No

Checkpoint Signatures

1. Hall Coefficient and Van der Pauw Method

   Staff Signature _____

2. Apparatus and Procedures

   Staff Signature _____

3. Extrapolating Data

   Staff Signature _____

4. Electron or Hole Concentrations

   Staff Signature _____