

University of California at Berkeley

Hall Effect in a Semiconductor (SHE)

September 2009

Watch the video on this experiment

Student's Name _____

Partner's Name _____

Pre-lab Discussion Questions

1. What is a semiconductor?
2. What is the Hall Effect?
3. Explain Van Der Pauw Technique.
4. How do we explain the fact that there are “free electrons” in a metal conductor? Why are there energy bands?
5. What is the band gap? The valence band? The conduction band?
6. How do conductors, insulators, and semiconductors differ in their energy structures?

Staff Signature _____ Date _____

Completed on the *first* day of lab? (circle) Yes / No

Mid-lab Questions

1. By day 4, measure the *Hall coefficient* R_H of the sample at room temperature.

Staff Signature _____ Date _____

Completed on the *4* day of lab? (circle) Yes / No

INCLUDE THESE SHEETS AS THE FIRST PAGES OF YOUR REPORT

Now that you have completed this experiment, we would appreciate your comments. Please take a few moments to answer the questions below, and feel free to add any other comments. Since you have just finished the experiment it is *your* critique that will be the most helpful. Your thoughts and suggestions will help to change the lab and improve the experiments.

Please be as specific as possible, using both sides of the paper as needed, and turn this in with your report. Thank you!

Experiment name: _____ Date: _____

How was the write-up for this experiment? How could it be improved?

How easily did you get started with the experiment? What sources of information were most/least helpful in getting started? Were the reprints appropriate? Did the Pre-lab discussion help? Did you need to go outside the course materials for assistance? What additional materials could you have used?

What did you like and/or dislike about the experiment?

Would you recommend this lab to fellow student? Why or why not?

What advice would you give to a friend just starting this experiment?

If the course materials were available over the Internet (WWW, FTP, etc), would you (a) have access to them and (b) would you prefer to use them this way?

Please circle the abbreviations of the other labs you have done.	Overall quality of this experiment?
ATM BMC BRA COM CO ₂ GMA HAL	1 2 3 4 5
HOL JOS LIF LLS MNO MOT MUO	Poor Average Good
NLD NMR OPT OTZ RUT SHE XRA	