JOS - Josephson Junction

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. What is a Josephson Junction?
2. What is a Cooper Pair?
3. How does the DC Josephson effect work? What is the AC Josephson effect? How are they useful?
4. Why is it important to know the number 2e/h; what does it mean?
5. How do you construct the Josephson Junction used in this experiment? (Hint 4 wire junction)
6. Explain how you remove the junction assembly from the probe and put it back in. Which way do you turn the set screws?

Staff Signature _____ Date _____

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

Mid-Lab Discussion Questions

1. Show your photo of the DC effect with calibrated axis and photo of the AC effect, with calibrated axis, to a GSI. Also you present your measured corrected value for $2e/h$, with uncertainty, to an instructor and ask for a signature.

Staff Signature _____ Date _____

Checkpoint Signatures

1. Low-Frequency Oscillator

   Staff Signature _____

2. Steps

   Staff Signature _____

3. DC Effect

   Staff Signature _____

4. AC Effect

   Staff Signature _____

5. Precise Measurement of the RF Frequency

   Staff Signature _____