Superconductivity PreLab
Rochester Institute of Technology

PHYS-316 Advanced Lab*

January 21, 2022

1. Make a sketch showing how you might expect the resistance of a superconductor to behave as a function of temperature. Be sure to include regions above and below the critical temperature T_C.
2. In the case of the experimental realization of superconductivity in this lab, do you expect the resistance to fully drop to zero? What might cause the measured value to remain above zero?
3. What is the highest critical temperature T_C measured to date, what material is it, and what conditions (temperature and pressure) was it measured under? Cite your source.
4. Read the safety information in the lab manual. Read Section 1 of the Liquid Nitrogen Hazard document? Briefly describe at least three possible hazards associated with liquid nitrogen that you might encounter in a laboratory setting.

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