

Experiment #5

Variation of Resistance with temperature

Objectives

- 1- To investigate the variation of the resistance of metals with temperature
- 2- To measure the temperature coefficient of resistance for copper

Equipment

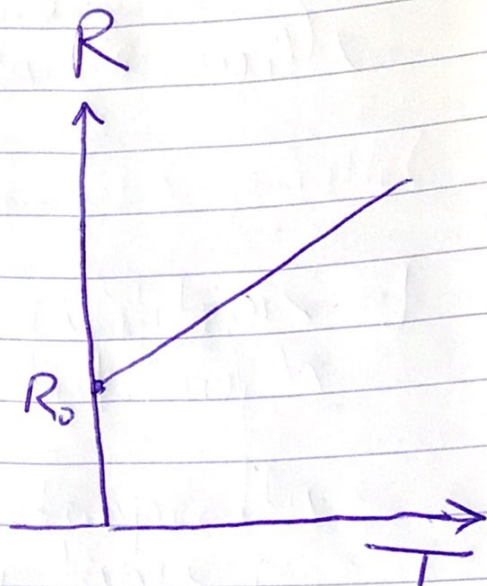
- Glass Beaker
- copper resistance coil
- Heating arrangement for water
- Thermometer $(0 - 100)^{\circ}\text{C}$
- Ohmmeter

(1)

$$\alpha = \frac{R - R_0}{R_0(T - T_0)}$$

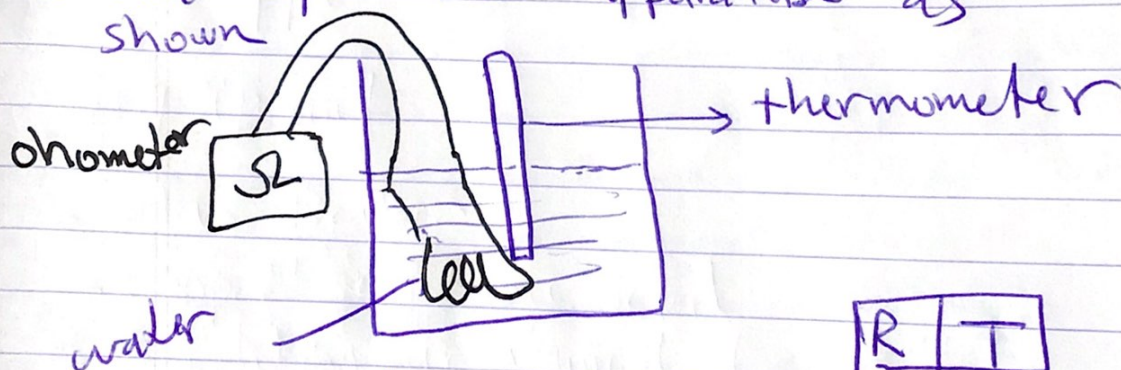
$$\alpha = \frac{\text{slope}}{R_0}$$

regard $T_0 = 0$
 $\rightarrow R_0$ at $T_0 = 0$



procedure

- set up the apparatus as shown



- Fill the table of R, T

R	T

- plot R versus T

- Find R_0

- Find slope

- calculate α

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