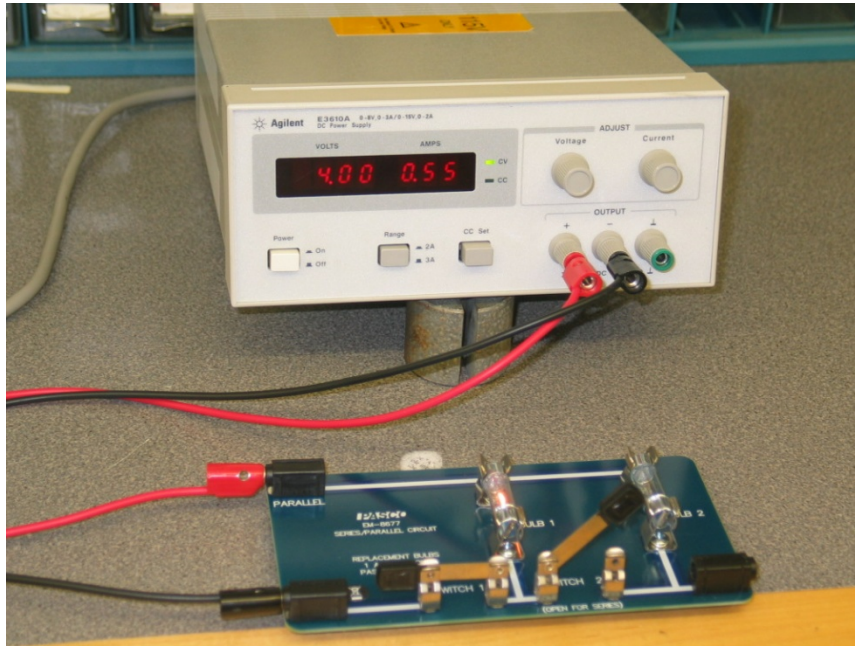


Resistivity and Temperature



Purpose: To demonstrate the effect of temperature on resistivity.

Location: Room 146; EM-8677 circuit board, shelf M3; HP power supply on shelf C3

Turn the voltage all the way down, then connect the + terminal of the power supply to the “parallel” port on the circuit board, and the - terminal to the common port as shown. Close switch 1 and open switch 2 so the current flows through only one bulb. Apply 1V to the circuit and observe and record the current. Calculate and record the resistance using $R=V/I$. Now increase the voltage to 2V, record the current, and calculate the resistance. Repeat for 3V, 4V, and so on to show that as the bulb gets brighter, and therefore hotter, the resistance of the bulb increases. This is due to the increase in resistivity of the filament in the bulb as it gets hotter.