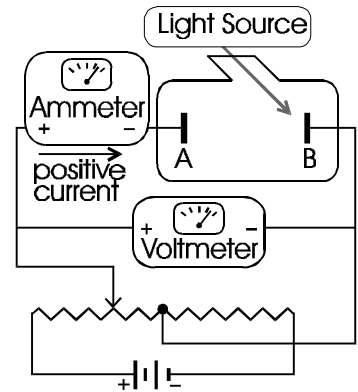


7. Suppose you were to perform the photoelectric effect experiment using light of $\lambda = 250 \text{ nm}$ and two electrodes made of nickel ($F = 5.2 \text{ eV}$). You find that when the potential difference measured across the electrodes V is equal to zero volts, the ammeter reads zero current.

Would the ammeter read *zero* current or a *non-zero* current (choose one for each part below) if you were to:

- a. Replace the nickel electrode B with one made of aluminum ($F=4.2 \text{ eV}$)? Ammeter reads *zero* / *non-zero* (circle one)
Explain your reasoning.



- b. Double the intensity of the light source (using the nickel and not the aluminum electrode)?
Ammeter reads *zero* / *non-zero* (circle one) Explain your reasoning.
- c. Increase the potential difference V across the electrodes from 0 volts to +5.5 volts (using the nickel electrode)? Ammeter reads *zero* / *non-zero* (circle one) Explain your reasoning.
- d. Replace the nickel electrode A with one made of aluminum (while electrode B remains a nickel electrode). Ammeter reads *zero* / *non-zero* (circle one) Explain your reasoning.