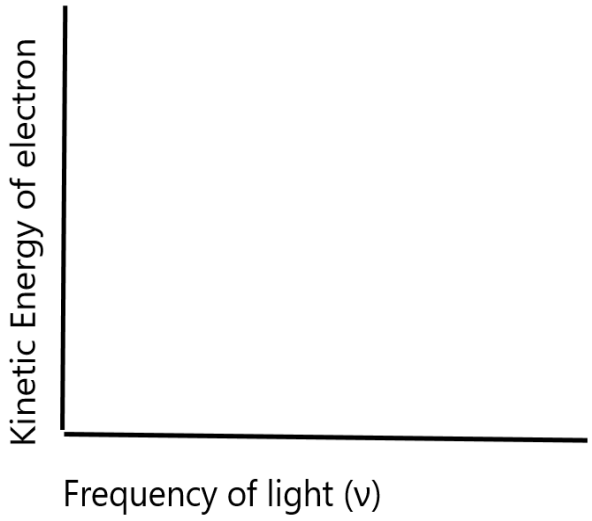
Practice Problem 1 (Electromagnetic Radiation)

What is the wavelength (in nm) of an electromagnetic wave whose frequency is 4.07×10^{15} Hz?

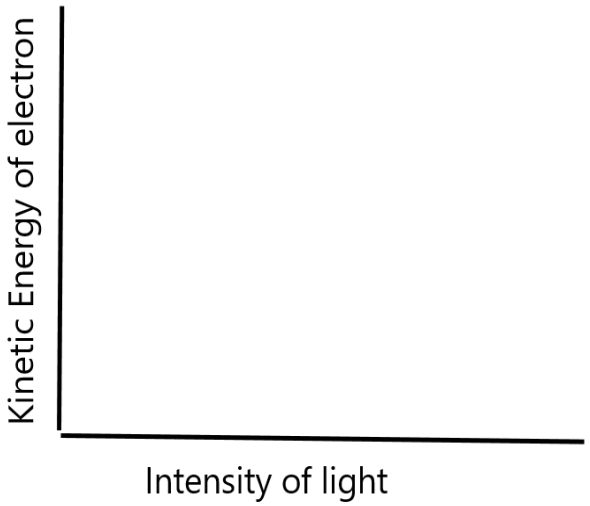
Practice Problem 2 (Photoelectric Effect)

Based on photoelectric effect, draw the plots for the following and explain

A. Kinetic energy of electron versus frequency of light



B. KE of electron versus intensity (or brightness) of light. (At frequency above threshold frequency)



Practice Problem 3 (Photoelectric Effect)

A particular metal has a work function of 1.907 eV. What will the velocity of the removed electron be if light of wavelength 550 nm is applied to the metal surface?

Practice Problem 4 (Photoelectric Effect)

The longest wavelength of light that causes electrons to be ejected from the surface of a metal plate is 300 nm. What is the wavelength (in nm) of the light applied to this metal surface if the ejected electron has a velocity of 1.21×10^{6} ms^{-1}? Give your answer to 3 significant figures

Practice Problem 5 (Atomic Spectra)

Calculate the wavelength (nm) corresponding to the emission line resulting from a transition of n=3 to n=2 in hydrogen atom?