

# LECTURE 3

1. Consider electrons ejected from the surface of a metal following irradiation with ultraviolet light. (a) What is the relationship (if any) between the kinetic energy of the ejected electrons and the wavelength of the UV light? (b) What is the relationship (if any) between the kinetic energy of the ejected electron and the intensity of the UV light?

**(a) The (maximum possible) kinetic energy of the electrons is *inversely proportional* to the wavelength of the UV light below some maximum threshold wavelength. Above the threshold wavelength no electrons will be ejected. (It's ok if threshold wavelength is not mentioned, since the question specifies that electrons are ejected)**

**(b) At a given wavelength, the intensity of the UV light does NOT affect the kinetic energy of the ejected electrons. (Also correct to write that at a constant number of photons per second, the higher the intensity of light, the higher the kinetic energy of the electrons ejected.)**

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5.111 Principles of Chemical Science  
Fall 2014

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