

32. The difference between the energy absorbed and the energy emitted is

$$E_{\text{photon absorbed}} - E_{\text{photon emitted}} = \frac{hc}{\lambda_{\text{absorbed}}} - \frac{hc}{\lambda_{\text{emitted}}} .$$

Thus, using the result of problem 3 in Chapter 39, the net energy absorbed is

$$hc\Delta\left(\frac{1}{\lambda}\right) = (1240 \text{ eV}\cdot\text{nm})\left(\frac{1}{375 \text{ nm}} - \frac{1}{580 \text{ nm}}\right) = 1.17 \text{ eV} .$$