

25. To find the longest possible wavelength  $\lambda_{\text{max}}$  (corresponding to the lowest possible energy) of a photon which can produce a photoelectric effect in platinum, we set  $K_{\text{max}} = 0$  in Eq. 39-5 and use  $hf = hc/\lambda$ . Thus  $hc/\lambda_{\text{max}} = \Phi$ . We solve for  $\lambda_{\text{max}}$ :

$$\lambda_{\text{max}} = \frac{hc}{\Phi} = \frac{1240 \text{ eV} \cdot \text{nm}}{5.32 \text{ eV}} = 233 \text{ nm} .$$