

TL 5-41 (electron microscope)

• Features are only visible that are larger (approximately) than the wavelength of the light used to observe them.

• If we want to see feature of size $\Delta x = 0.1 \text{ nm}$,

we need $\lambda \leq 0.1 \text{ nm}$

• Since $\lambda = \frac{h}{\sqrt{2mE}} < 0.1 \text{ nm}$

or $E = \frac{h^2}{2m\lambda^2}$

$E \geq 150 \text{ eV}$