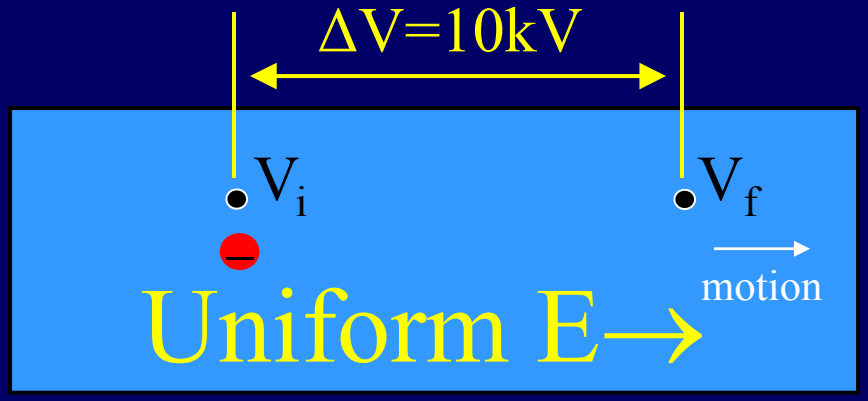
Example

# Electron microscope





- What is the final velocity of the $e^-$?
- Solve by conservation of energy:

$$K.E._i + P.E._i = K.E._f + P.E._f$$

$$0 + -eV_i = \tfrac{1}{2}mv^2 + -eV_f$$

$$v = \sqrt{\frac{2e\Delta V}{m}} = \sqrt{\frac{2(1.6\times10^{-19})(1\times10^{4})}{9.1\times10^{-31}}}$$

$$= 5.9\times10^{7} m/s$$

Could solve this using F=ma & kinematic equations (Phys 101) TRY AT HOME! (HARDER)