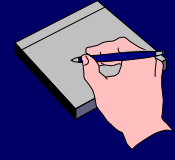
Electron Tubes



- **Accelerate an electron through a voltage difference to give it some energy…**

An electron is accelerated through a potential difference of 70,000 V. How much energy does it emerge with?

Recall from Lecture 3: $\boxed{EPE = V\,q}$

$$KE = EPE = (70{,}000\ V)\ (1\ e^-) = 70{,}000\ eV$$

$= 1.6 \times 10^{-19}\ C$

$= 11.2 \times 10^{-14}\ J$

EPE of voltage gap becomes K.E. for electron.