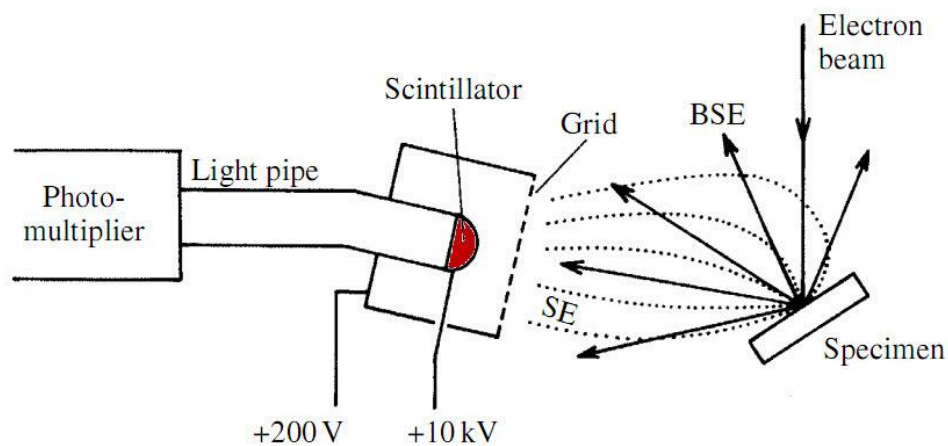


## Everhart-Thornley (E-T) Detector



An Everhart-Thornley detector, as used in SEMs

### *How to work*

low-energy secondary electrons (SE) are attracted by +200V (positive Bias) on the grid (Faraday Cage)

↓

light produced by the scintillator as accelerating SE onto the scintillator by +10kV

↓

light produced light along a transparent 'light pipe' to an external photomultiplier

↓

then converts light into an electrical signal

In such case, backscattered electrons (BSE) are also detected, but less efficient.

If a negative voltage is applied to the grid, SE are repelled and only BSE are unaffected owing to their much higher energy, then Everhart-Thornley can be used to detect BSE. However, the efficiency in this mode is much lower.