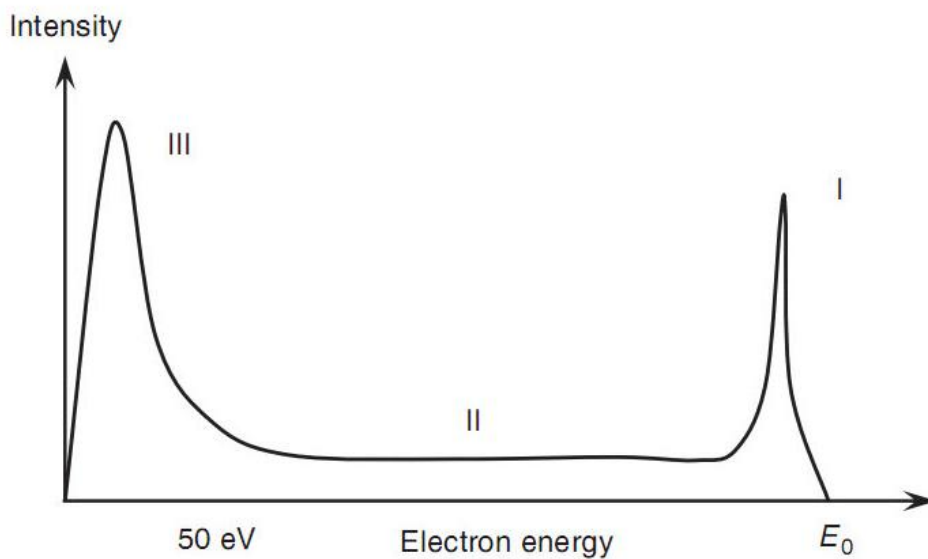


**Backscattered electrons (BSE) are primary beam electrons that have been deflected by collisions with atoms to such an extent that their path actually takes them back up through the sample surface.**



Idealised schematic plot to illustrate the distribution of electron signals, and their approximate energies, for a given primary beam energy.

Regions I and II refer to the backscattered electron contributions, while Region III corresponds to the secondary electron signal

**Region I:** electrons retained  $\geq 50\%$  of the primary electrons

**Region II:** a broad tail, losing energy (inelastically) before being backscattered (elastically) out of the sample

**The BSE coefficient  $\eta$  is the ratio of the number of backscattered electrons emitted  $n_{\text{BSE}}$  to the number of primary electrons bombarding the sample  $n_{\text{PE}}$  (or their equivalent currents), as**

$$\eta = \frac{n_{\text{BSE}}}{n_{\text{PE}}} = \frac{i_{\text{BSE}}}{i_{\text{PE}}}$$