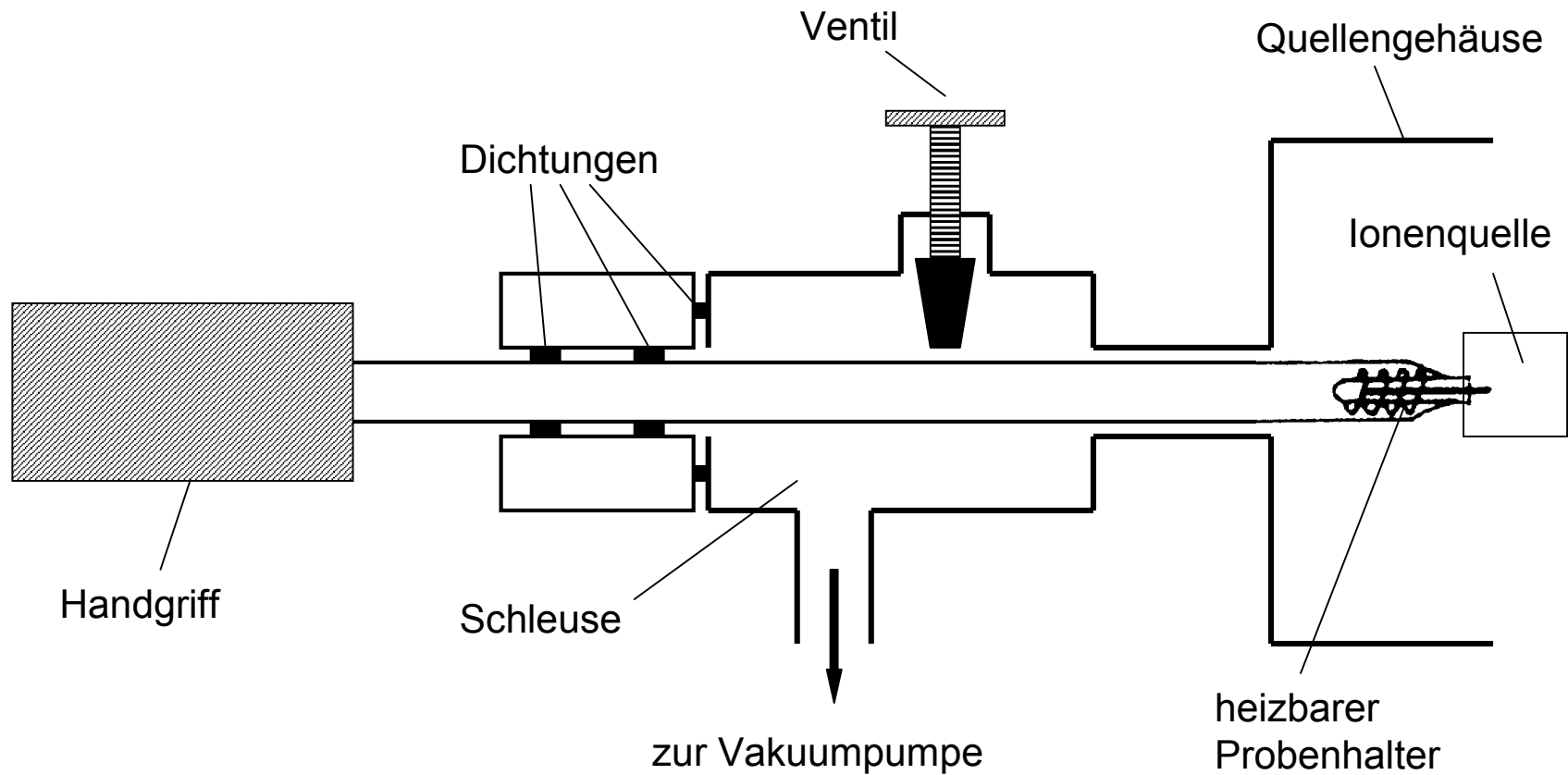


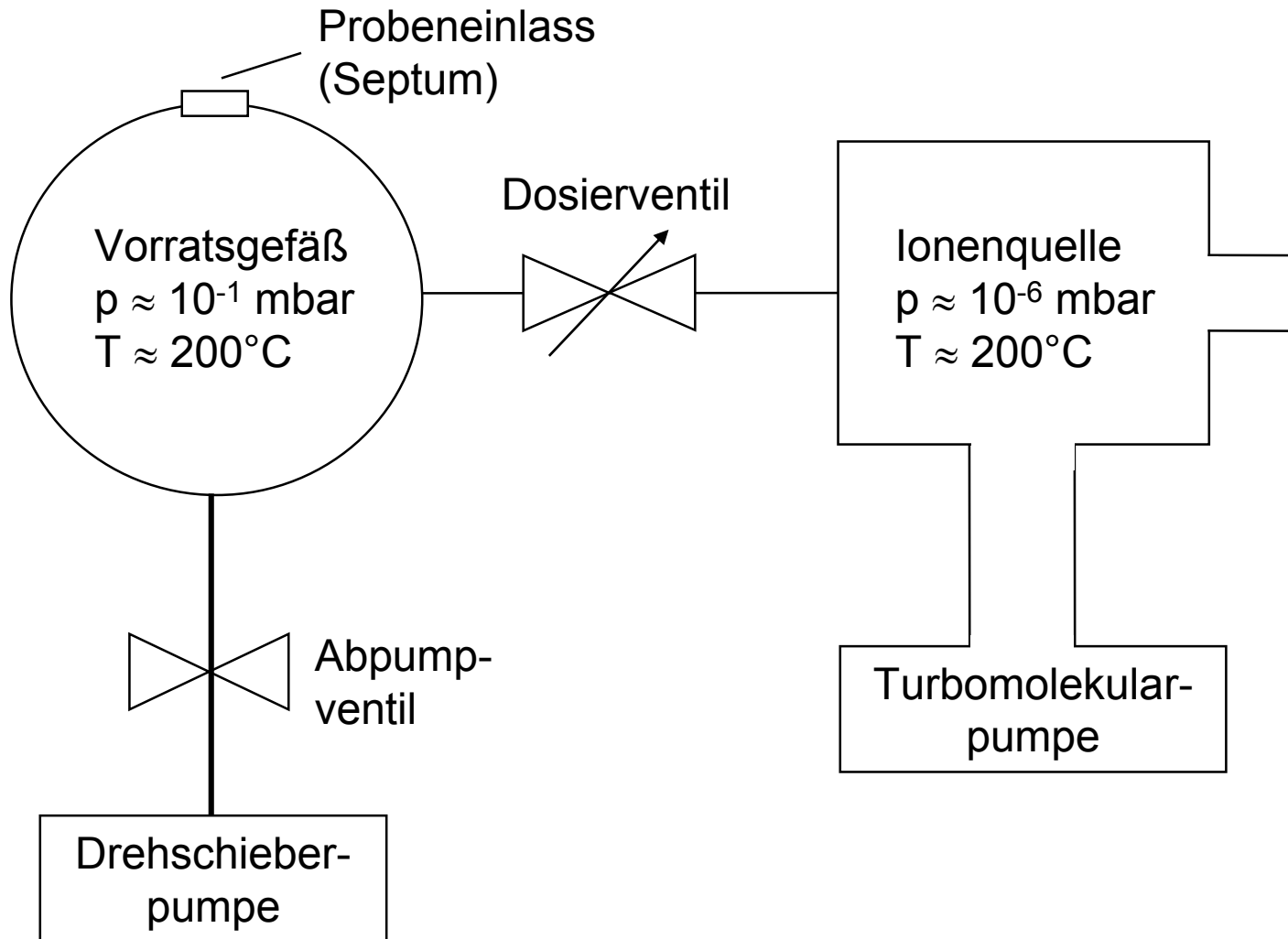
Einlasssysteme

a) direkter Einlass (Schubstange): feste Proben

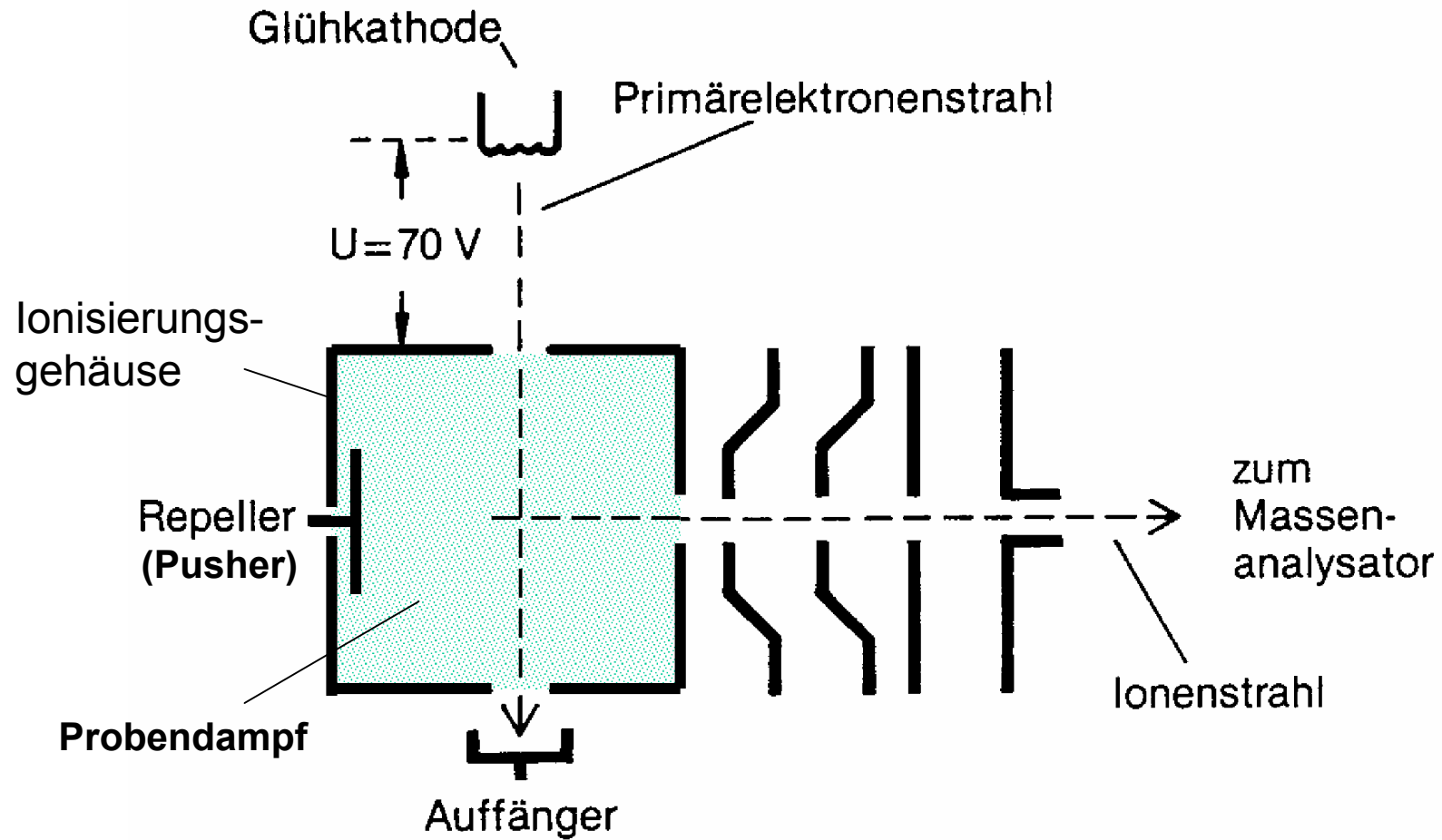


Einlasssysteme

b) indirekter Einlass (flüssige u. gasförmige Proben)



Ionenquelle für Elektronenstoß-Ionisation (EI)



Abhängigkeit der Ionenausbeute von der Elektronenenergie

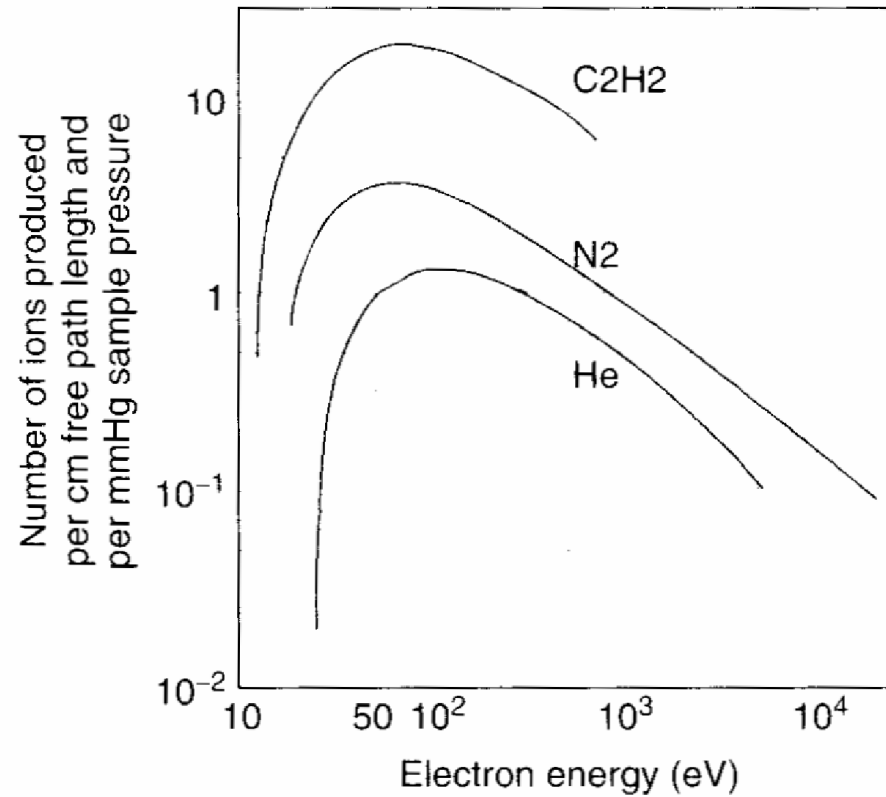
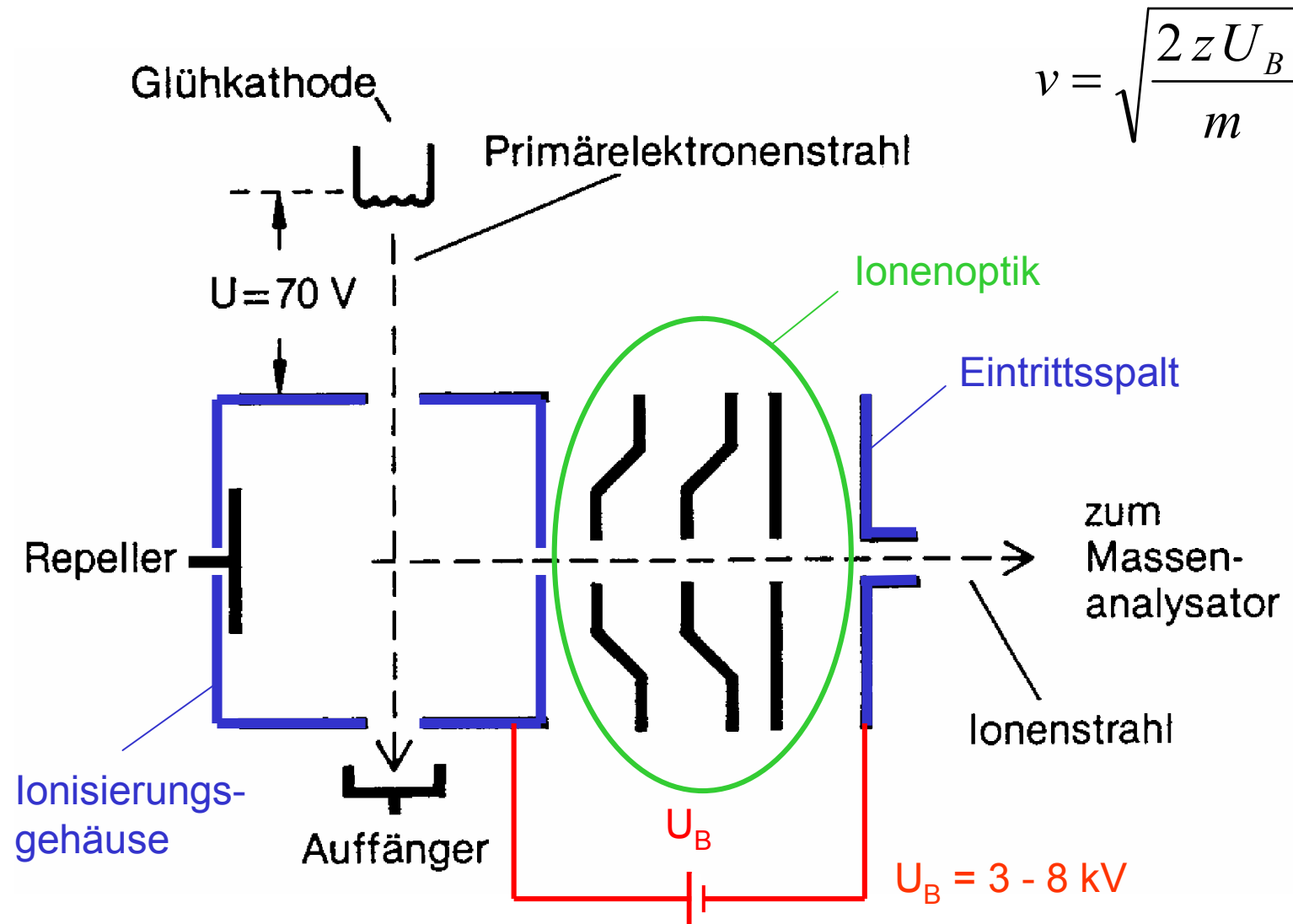


Figure 1.2

Number of ions produced as a function of the electron energy. A wide maximum appears around 70 eV.

Beschleunigung von Ionen



Magnetisches Sektorfeld-MS

a) Massendispersion

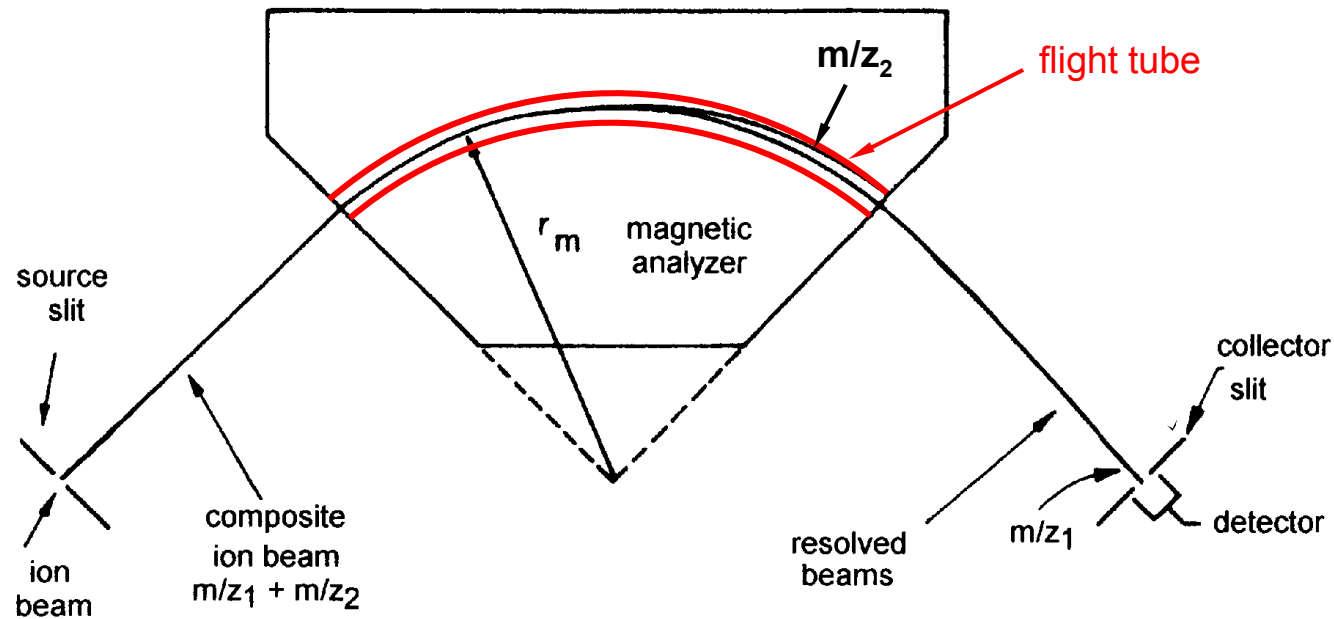


Fig. 4.19. A 90° magnetic sector illustrating m/z separation.

Grundgleichung:
$$r_m = \sqrt{\frac{m}{z} \cdot \frac{2U_B}{B^2}} \quad \text{bzw.} \quad \frac{m}{z} = \frac{r_m^2 \cdot B^2}{2U_B}$$

Magnetisches Sektorfeld-MS

b) Richtungsfokussierung

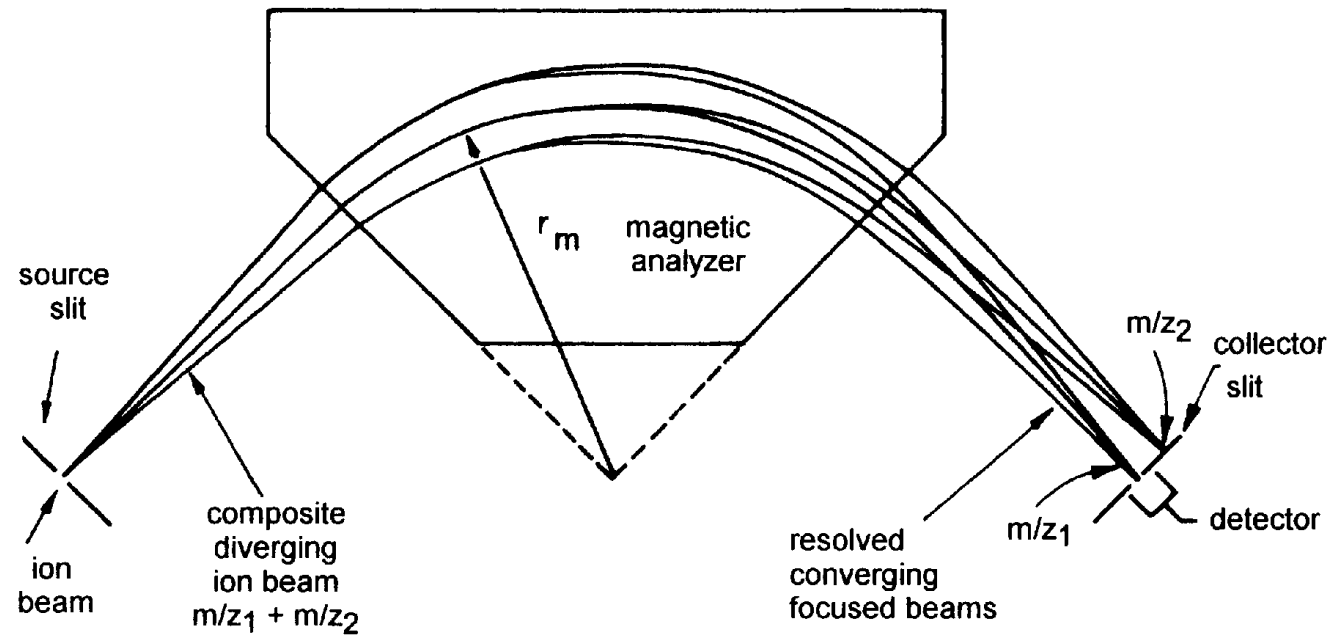
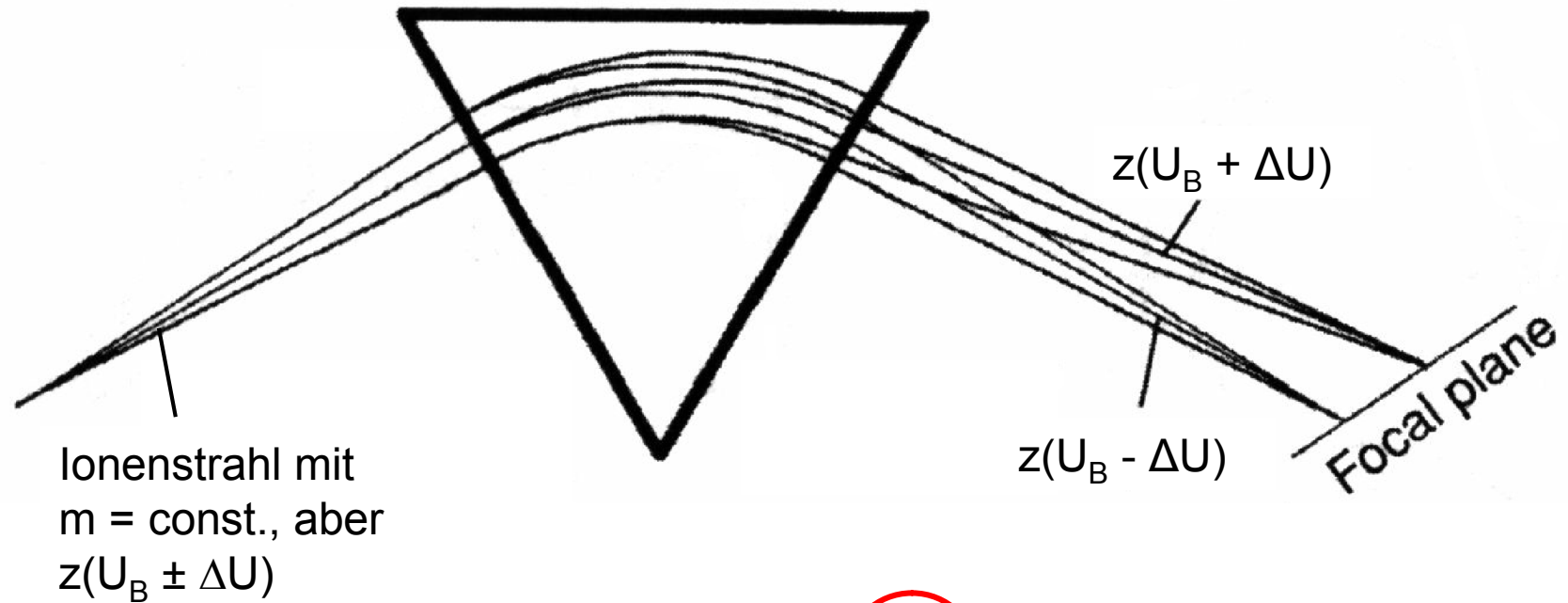


Fig. 4.19. A 90° magnetic sector illustrating m/z separation and direction focusing in a plane (angles are shown exaggerated). Reprinted from Ref. [1] with permission. © American Association for the Advancement of Science, 1979.

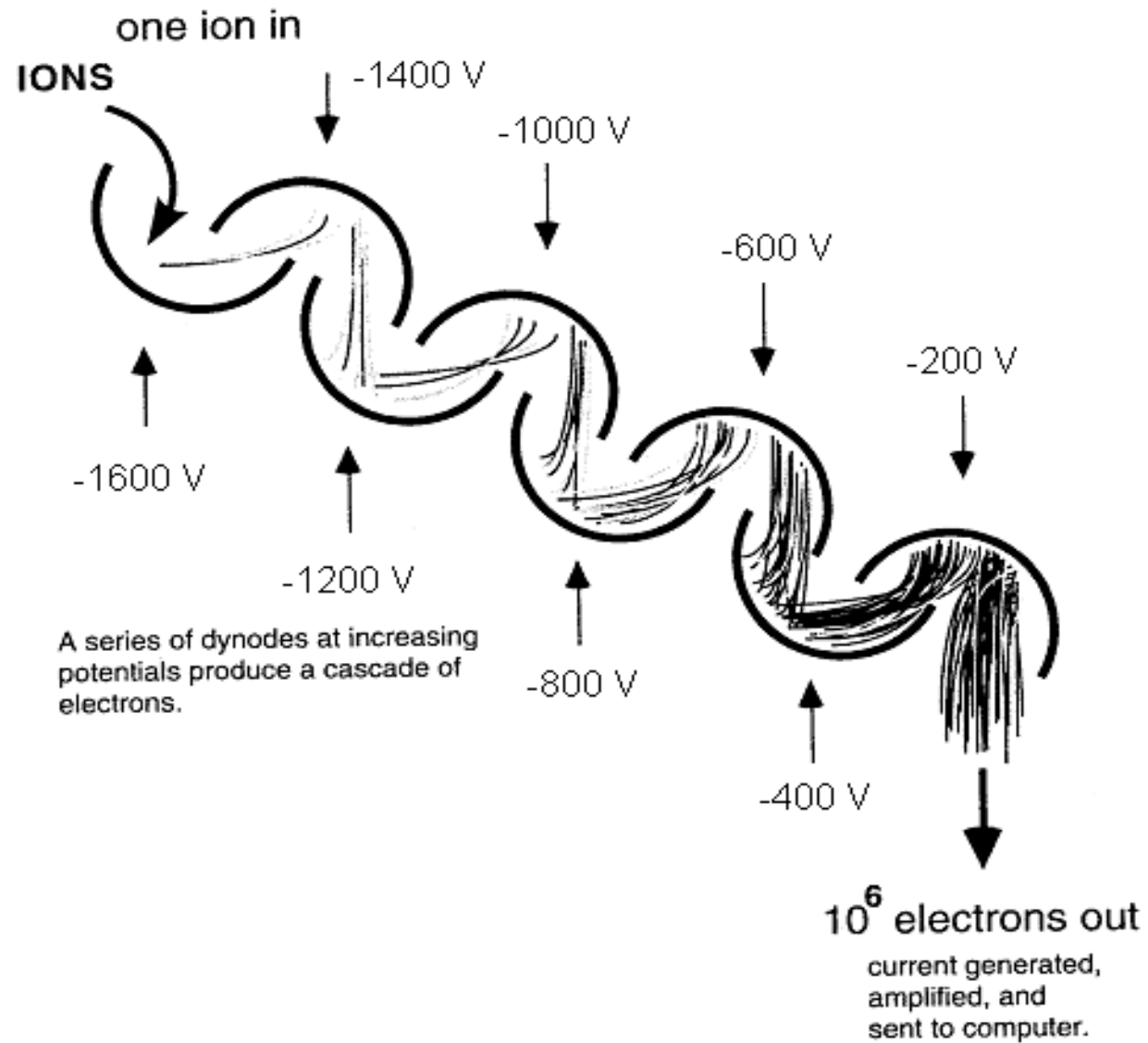
Magnetisches Sektorfeld-MS

c) Energiedispersion



$$r_m = \sqrt{\frac{m}{z} \cdot \frac{2U_B}{B^2}}$$

Sekundärelektronenvervielfacher (SEV):



EI-Massenspektrum (Acetophenon, C₈H₈O, M = 120):

